The Builder.

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ILLUSTRATIONS.

New Oratory of the Sacred Heart, Liverpool: Interior and Exterior Views.—Messrs. Goldie, Child, & Goldie, Architects 850, 851
School Board for London: Berner-street and Hackford-road Schools.—Mr. T. J. Bailey, Architect 854, 855
Hatton House, Westgate-on-Sea.—Mr. J. T. Wimperis, Architect 858
The Park, Ledbury.—Messrs. R. Coad and J. M. Maclaren, Architects 859
Tomb of Bishop William De La Marchia, Wells Cathedral.—Drawn by Mr. R. W. Paul 862, 863

CONTENTS.

Building Stones at the Colonial and Indian Exhibition 839
New Theory on the Sculptured "Thanatos" Drum of the Ephesus Column in the British Museum 840
Notes 841
Wood-Carving, Pottery, and Glass exhibited in Indian Courts 843
Architecture at the Royal Academy.—VII. 846
The Annual Report of the Metropolitan Board of Works 847
Competitions 847
Election of Two District Surveyors 848
Church of the Sacred Heart, Liverpool 848
New Board Schools for London 848
Additions to "The Park," Ledbury 848
"Hatton House," Westgate-on-Sea 848
Tomb of Bishop Wm. de la Marchia 848
Society for the Protection of Ancient Buildings 865
Artists' Benevolent Fund 865
Association of Municipal and Sanitary Engineers and Surveyors 866
The Chemical Treatment of Sewage 867
Tilbury Docks Arbitration 867
Association of Public Sanitary Inspectors 867
Weather Stains on Walls 868
The Student's Column: Our Building Stones.—XIV. 868
Recent Patents 869
Recent Sales of Property 869
Meetings 869
Miscellanea 870
Prices Current of Building Materials 870

Building Stones at the Colonial and Indian Exhibition.

THE authorities of the Colonial and Indian Exhibition appear to have paid considerable attention to the representation of building stones, in their respective departments, almost without exception. Some of these exhibits are intended to induce us to purchase some of our stones,—especially those of an ornamental nature,—from the colonies, whilst others are merely to show the kinds of stone used locally.

The stones from the Indian Empire are arranged under the walls of the Economic Court. The Archæan rocks are of vast extent in India, granitoid gneiss being the prevailing type, and this, together with granite, has been employed on a grand scale in the temples of Southern India. Nos. 7, 8, 9, and 32 are examples. No. 8 is a grey granite, of a rather coarse texture, the felspar being large, and is the principal building stone at Hyderabad, in the Deccan. Crystalline limestones in India, as elsewhere, are amongst the most beautiful ornamental stones. No. 25 is the white "Makrana Marble" so extensively used in the Great Mogul monuments of Delhi and Agra, from the Makrana quarries in Jodhpur, Rajputana. This is the material also employed in the construction of the famous Taj Mahal at Agra. No. 26 is a dolomite polished as white marble.

The Deccan traps, which are a series of lavas and tuffs of the Cretaceous period, appear to furnish some of the best building stones in the Bombay district, nine kinds being exhibited. No. 12, "Sewri blue trap or basalt," Bombay Island, is stated to be the best class of building stone in Bombay. Nos. 13 and 14, traps from the Coorla quarries, Salsette, twelve miles north of Bombay, are much used in that city for coping, bases, columns, arches, large steps, &c.

The sandstones from the Gondwana formation are generally too porous and friable to form sound building materials. No. 17, "Hemnagar sandstone," Guzerat, and No. 18, "Seoni stone," from Hoshangabad, Central Provinces, are in good repute, now largely used in Bombay for fine and plain carved and moulded work. The former is grey, with light violet streaks, and the latter of a light brown colour. The upper Vindhyan sandstones afford everywhere building stones of the best description, with many shades of texture and colour, from nearly pure white to bright red. They have been very extensively used by the natives wherever within reach, for temples and palatial edifices, and by the British for railway viaducts. No. 20 is the "Chunar stone," Mirzapore district, North-West Provinces. It is of a grey colour, and much used in Calcutta, though terra-cotta mouldings are often substituted for it in architectural ornamentation. Nos. 35 and 36, "Agra stone," and "Agra red," are very fine salmon-coloured sandstones, and form the main material in the great buildings of Agra and Delhi.

In Sind, tertiary rocks afford numerous fine building stones, especially the nummulitic limestones, but there are no examples of them exhibited. The "Porebunder stone," No. 24, is principally made of foraminiferal remains, and is of recent origin. It is said to be an admirable building material, working like the finest oolite or Bath stone, and is extensively used in Bombay.

Three kinds of slate are exhibited. No. 1, Kangra slate, from the quarries of that name in the flanks of the Dhuladhar range, north of the Kangra valley. It is as fine and even as could be desired, but is more siliceous and crystalline than our Welsh roofing slate.

Considerable care has been taken to show, by means of maps, the extent of the various formations, and the fact of the whole having been under the supervision of Mr. H. B. Medlicott, M.A., Director of the Geological Survey of India, is a sufficient guarantee for the completeness of the work.

Amongst the few building stones from Ceylon, we may mention a gneiss from Mahára, used in making the Colombo breakwater; red granite from Veyangoda, and Cabook (or Laterite) from Colombo, extensively used for building in lieu of brick. A specimen of stone carving in a block of granite is exhibited by the Stone Guild of Hong Kong; and in the section allotted to Canada a large collection of rocks and minerals is shown, which apparently are not yet quite arranged.

The Geological Survey of the Dominion Government have sent several things, amongst which we notice a fine series of small cubes of sandstones, limestones, marbles, dolomites, granites, and porphyries. These represent the chief building stones of the colony. The sandstones and limestones are of various shades of colour and texture. Some of the granites are bluish (like Rubislaw); others are red, the felspar containing much iron. The lighter-coloured granites have sometimes a rough resemblance to that called "graphic" in this country. These specimens are placed above a large slab of "New Rockland" (near Quebec) slate, about 10 ft. by 4 ft. A fine piece of ornamentally-worked marble from Arnprior, Ont., is exhibited by Messrs. Hurd & Roberts, of Hamilton, Ont. The calcite in this limestone is of a light bluish colour, and presents a curious granular appearance. Thick dark streaks run here and there through the stone, which is beautifully polished. Three other marbles are from Barrie, Ont. All are more or less white, with oblique streaks of a light blue and dark slate colour running down them. Another marble from Hull, Quebec, has a laminated structure of a slaty-brown colour; others have white and black streaks. A conglomeratic-looking marble, with large vivid vermilion and dark-brown patches, attracts considerable attention.

There are two specimens of New Brunswick granite. One is similar to our light blue Aberdeen, but slightly yellow; the other has large crystals, the predominating felspar (orthoclase) being red. A granite from Gananoque, Ontario, is of a brilliant red colour; whilst another from Stanstead, Quebec, is white, with black mica, the felspar having a granular appearance. A cross on a pedestal is made of Halifax granite. It is of a whitish yellow colour, with very large crystals. Flags, serpentines, and many ornamental stones are also exhibited. It would be better, perhaps, if the stones were more grouped together.

The building stones from Queensland are well represented by about sixty large blocks, slabs, and cubes. Sandstones appear prominently, and amongst them we may notice two specimens of a brown colour, from Stanwell Rockhampton. This stone is said to get very hard on exposure, and stand the weather well, the angles remaining sharp for a considerable length of time. It has been used for many public buildings in Rockhampton.

There are five blocks of sandstone from three quarries near Helidon. These show the kind of materials which have been certified by the Colonial Architect to be used in the construction of the Brisbane Public Offices. The white varieties from No. 1 quarry will be used in the upper stories; the brown rather dark kind from No. 2 quarry, in the basement; and the bluish from No. 3 quarry (which takes a high polish) for the inner embellishments. Some specimens of sandstone are shown from Moggill Ferry. The rocks from these quarries have been examined by the Hon. A. C. Gregory, in selecting stone for the construction of the South Brisbane Dry Dock, and the result of his investigations will be published in the descriptive catalogue of the department. The white and brown sandstones from Grantham, Toowoomba, are said to be exceedingly good freestones, and have been used in the Government House, the Houses of Parliament, and the Town Hall in Brisbane.

Several limestones and some beautifully-

polished marbles, together with samples of granites, syenitic granites, and syenites, are also exhibited, but do not call for any special comment. We may, however, notice two specimens of porphyry from O'Connell Town, Brisbane. It is a compact rock of a light reddish-brown colour, consisting of felspar base, with a few quartz crystals scattered about. The Roman Catholic Cathedral is built of this porphyry, as well as the basement of the New Government Printing Offices, and various other public and private buildings in Brisbane.

We cannot close the remarks on the exhibit of stones from this colony without expressing our gratification not only as regards the manner in which the stones have been arranged, but the amount of useful and practical information which will be given to the public in the catalogue. The Hon. A. C. Gregory's private note-book has furnished the latter with the amount of absorption of water, specific gravity, weight per cubic foot, &c., of many of the stones represented.

From New South Wales there is only a small collection of stones. Light-yellow freestones from Pyrmont show us the material with which the principal edifices in Sydney are built, and other blue and white varieties come from West Maitland and Manly. A broad, tall obelisk-shaped object has some beautifully-polished slabs of marble from Marulan, Cow Flat, and near Tamworth, let in a wooden frame, covered with cloth. That from near Tamworth is a red encrinital marble, and in structure is precisely similar to our Derbyshire marble of the same name, being almost wholly made up of the stalks of fossil crinoids.

The group of stones from the colony of Victoria is arranged just outside the court. The most prominent object is a tall obelisk of "Stanwell" or "Grampian stone," from the Grampian Quarries, Victoria. It is a light-yellow colour, and is now being used for the Parliament Houses, Melbourne. Several blocks of sandstone, limestone, marble, and a few slates are shown. A beautifully-polished fountain is made of coarse grey Harcourt (Mount Alexander) granite, and there is a small block of rather coarse red granite, in which the orthoclase felspar is conspicuous.

Building stones from South Australia are well represented by about forty-five specimens, mostly cubes, arranged in tiers. We may notice the Finniss freestone of a light yellow colour, which is reported by some of the leading architects and others to be the best freestone yet discovered in the colony.

The main public buildings in Adelaide are constructed of Teatree Gully freestone. Three samples of this are exhibited: one is a light yellow colour; the others, white. One of the latter is moulded to show its effect. "Red Dolomite" from Mount Gambier, and several marbles, some blocks of which are moulded, are exhibited. The Willunga stone has been extensively used for paving, but the Mintaro flag-stone has now taken its place, not being quite so laminated. Of the granite, that from West Island, near Port Victor, has been used in the basement of the new Parliament buildings. It is of a greyish colour, and very coarse, having large felspar crystals.

In the department of Western Australia there is a fine, almost white, granite pedestal, cut in the neighbourhood of York Green Mount; together with a block of light brown coarse sandstone.

There are also six small 6-in. cubes in a case representing the stone obtained from Kellmscott, Freemantle, and Champion Bay. Surmounting these is a small limestone ornament, moulded to show facility of working.

The majority of the stones from New Zealand, in the West Annexe, are exhibited by the Public Works Department, Wellington. Some of them are very similar in appearance to our oolitic freestones; and one cube is almost wholly made of fossil shells, in such a manner that we might imagine it to be a block of Portland. The object calling for special attention, however, is a finely-carved and moulded white limestone column exhibited by the Totara Freestone Co., Oamaru, Otago. It stands on a rough block apparently of the same kind of stone, and shows at once the skill of the mason, and the homogeneous character of a freestone of first-rate quality. It has, unfortunately, been chipped here and there at the corners (in transit probably), but this is only noticeable on a close inspection, as it has since been mended. Other freestones are of light green, slate, and salmon colours, and there is a cube of crystalline white marble having a fine polish. Two blocks of "Timaru blue stone," and one block of dressed "Raglan," are examples of stones much used. The igneous rocks are represented by a block of fine white granite, with large felspars; white mica and little black micaceous-looking specks are found all over the stone. A little iron, as shown by brown markings, is also present. One block, probably a lava, is of a dirty slate colour and full of small holes: it might do very well for rough work when stone of better appearance is not at hand.

There are several blocks of building stone from the Cape of Good Hope in the Queen's Gate Annexe. Unlike those of some of the other departments they are not arranged in a group, but are scattered about here and there. Some blocks, too, stand by themselves with nothing printed on them to show where or for what purposes they are used. The exhibit would be much more useful if this were attended to.

We may notice a large cube of granite from Paarl, exhibited by the Table Bay Harbour Board. It is of a light grey colour, rather coarse, the crystals not being well defined, very much resembling some of the white Irish granites when dressed; but polishing reveals a slight light-brown tinge of a peculiar nature. It has been used in the construction of the Graving Dock, Cape Town.

There is a white freestone from Grahamstown, one from Maraisburg, Cradock district; two specimens of marble from Troe Troe, Clanwilliam division, and sandstone from Mossel Bay. The marble has a white ground with small irregular light-blue veins running over it, and, being finely crystalline, takes a good polish.

The stones sent from Natal appear to be still under arrangement. A noticeable object in the collection is a moulded column and pedestal executed in a fine grained sandstone of a light greenish colour. The stone appears to be easily worked and the angles are sharp. Several freestones of a grey colour come from Umginto, Weenen, Pietermaritzburg, and Greytown. In such a climate as that of Natal they are, no doubt, very durable. There are specimens of crystalline limestone (marble) streaked with blue veins, and some beautiful white marbles. The latter are exhibited by Messrs. Marcus Moxham & Co., of Swansea. The Natal Commission show, amongst other things, a sample of building stone from Mount Moriah, Victoria, and four blocks of unpolished granite from Inchanga. A specimen of granite, partly polished, has large white felspar crystals, being very coarse.

The small but important dependency of Malta has sent a very large series of building stones, the majority of which are arranged in a stack outside the door facing the south-east basin. They form one of its prominent exhibits and include marbles, sandstones, and granites. The façade outside the main entrance to the Court was made in Malta under M. Galizia, Superintendent of Public Works, from an original design, based upon German Renaissance met with at Heidelberg, sent out to Malta and there executed, and sent back to this country in numbered blocks, so that it was re-erected here in a very short space of time. We can strongly recommend those interested to pay a visit to the Maltese Court to see the beautiful and elaborate carvings in stone, which are not equalled by those of any other department in the exhibition.

We are not altogether surprised that ornamental stone-work is so well represented, because it is, in fact, one of the chief specialities of the island, and the official catalogue, p. 461, invites us to purchase some of our stone carving from Malta, or to get it done there; but this can hardly be convenient or practicable.

From Cyprus we have several crystalline marbles and some sandstones, from quarries near Larnaca, Nicosia, and Limassol. In conformity with the general care taken in the arrangement, which characterises the exhibits from this island, we find that the building stones each have the weight per cubic foot given on neat labels, with the name of the quarry; an example which might with advantage be copied in some of the other sections of the exhibition.

NEW THEORY ON THE SCULPTURED "THANATOS" DRUM OF THE EPHESUS COLUMN IN THE BRITISH MUSEUM.

THE *Bulletino della Commissione Archæologia Communale di Roma*, published by the Academia dei Lincei, enters this year on a new series. The first issue is marked by a paper from Dr. Benndorf, which, offering as it does a new interpretation of the famous "Thanatos" drum in the Ephesus room of the British Museum, cannot fail to be of interest to English readers. The drum in question, it will be remembered (of which we published an illustration at the time of its discovery), has upon it five figures in good preservation,* and to one of

these, the figure of a youth with wings and a sword in its scabbard, the current interpretation,—that of Dr. Robert,—is due. He sees in the group a representation of the return of Alcestis to the upper world. Heracles has fought with Thanatos and wrested from him his prize. Thanatos, the youth with wings and sword, softened in face and gesture, motions to the woman next him, Alcestis, to depart. Hermes, with face upturned, already looks away from the lower world. Persephone, to the right, stands in front of the seated Pluto, from whom she has just obtained consent for the release of Alcestis. When we say at the outset that instead of this scene of the conquest over death, solemn and yet triumphant, Dr. Benndorf asks us to read a tale whose import is light and cheerful, the "Judgment of Paris," we feel that to the uninitiated the faith of the archæologist must seem, indeed, a reed shaken by the wind.

Dr. Benndorf shall, however, make good his own case. He was brought, as so often happens, to reconsider the Thanatos interpretation by certain reflections arising from the study of quite another monument. This monument was the figure of a youth, a phototype of which he publishes in the *Bulletino*, tav. I. and II., side by side with the so-called "Thanatos." This statue was found in 1876 at Rome, in the spot where formerly the Rospigliosi Gardens were, now destroyed by the Via Nazionale; it is life-sized, of Pentelic marble, and bears evident traces of having been painted, specially about the eyebrows, pupils of the eye, and hair. It has fortunately escaped restoration, and it can be clearly made out that it was worked in several pieces, afterwards put together. It now stands in the beautiful octagon room of the Conservatori Museum on

* We give a small sketch of it here again, as a memorandum of the arrangement of the figures here referred to.

the Capitoline Hill. Placed side by side with the "Thanatos," the resemblance between the two is obvious; there is the same melancholy inclination of the head, approximately the same pose of body, the same belt across the body and right shoulder. Further, Dr. Benndorf thinks it certain, from the holes at the back of the Capitoline figure, that it was originally winged, like the Thanatos. The execution of the figure points to the days of Græco-Roman work, but Dr. Benndorf thinks the conception is of good Greek times. Accepting the analogy of the two figures, the statue in the round would certainly *not* be a copy of a decorative work in relief; the work in relief is of prior date to the statue in the round; if, therefore, any connexion is to be established between them they are not, either of them, a copy of the other, but rather both must have borrowed their motive from a third great original. The question is what was this original?

Unless there is a strong reason to the contrary, we should naturally interpret a youthful male figure with wings as Eros. How, then, has the Thanatos interpretation come about for the Ephesus figure? Obviously in order to account for the apparently strange conjunction of the wings and sword; what had the gentle Eros to do with so warlike a weapon? Why does he lay aside his accustomed bow and arrows? We must add that Dr. Robert, the author of the Thanatos theory, had his mind full of this conception of the winged and sword-bearing Thanatos, he had long devoted himself to the interpretation of that peculiar series of white Attic lekythoi, on which is represented the laying of the dead man in the grave, by the four-winged figures, Death and Sleep. He had, therefore, naturally, a predisposition to see this figure of Thanatos wherever possible. Given Thanatos, he set himself to find a fitting myth where Thanatos should be the principal figure: hence the Alcestis interpretation. If we can take away the necessity of the Thanatos interpretation (based entirely on the *attributes*, not on the character of the figure), the Alcestis theory falls away with it.

As we have noted, but for the attribute of the sword, the figure, soft and youthful, tinged with reflective melancholy as it is, would naturally be regarded as Eros. Is this attribute of the sword really incongruous? A moment's consideration will show that, on the contrary, it is absolutely appropriate and expressive. We are too apt, Dr. Benndorf points out, to regard Eros from the Roman point of view; to think of him as the mischievous schoolboy with bow and arrows, always in mischief, but never a serious divinity. But this is not the conception of Sophocles or Plato, or even of Euripides, nor is it the conception embodied in plastic art until Alexandrian days. For Sophocles (Trach., 441), Eros is the strong boxer (πύκτης) with whom a man does ill to contend. He is the warrior unconquered in battle (ἀνίκατε μάχαν); he comes not to bring peace, but a sword; for Anacreon is the smith who smites with ponderous blow. These passages alone would amply justify the attribute of the sword; but, turning to the far more apposite evidence of the traditions of art itself, we remember that Alcibiades bore on his shield the device of Eros armed with a thunderbolt. On vase-paintings he appears wielding a goad, with which he compels Zeus himself to love; often he carries a lance, and on one archaic vase he flies through the air bearing both shield and spear. Such is the Eros of the fifth and fourth centuries B.C.,—robust, virile,—a warrior, beautiful, indeed, but also terrible, never frivolous; a warrior who might wield on occasion any weapon from the arsenal of Zeus. So far we are with Dr. Benndorf entirely. We believe that he has satisfactorily disposed of Thanatos, and the winged deity bearing the sword will henceforward be acknowledged as Eros.

Having established Eros, Dr. Benndorf has now to cast about for a myth which shall give prominence to Eros and shall admit Hermes; for about the explanation of the youth carrying the caduceus there is, of course, not the shadow of a doubt. Dr. Benndorf, at the suggestion, he says, of Dr. E. Petersen, proposes the myth of the Judgment of Paris. In justice to him we must say that he regards this theory as a mere conjecture (*semplice congettura*). The seated figure he proposes as Zeus, the standing female figure next as Hera; then follows Hermes, looking upward; then Aphrodite; then Eros; the rest of the column not preserved must, on this hypothesis, have been filled up by the figures of Athene and Paris. We cannot say we feel any inward conviction of the truth of this hypothesis; though there is no objection to the presence of Zeus. The judgment took place by his decree, and he is present on red-figured vase-paintings contemporary with the drum. It is noticeable also that the Hermes of these vase-paintings, *e.g.*, the famous vase at Berlin, has just the upward gaze of the Ephesus Hermes; but in the vase-painting there is a reason,—Paris is seated on a rock above Hermes. The principal point that we feel to be unsatisfactory is the scattered arrangement of the figures; naturally on a column they would be arranged in a frieze-like procession,—Paris, Hermes, the three goddesses,—whereas in the Ephesus drum we have Zeus and Hera, then Hermes, then Aphrodite, Eros, Paris, and Athene. This objection is not, however, fatal, but the theory wants confirmation.

Dr. Benndorf has more to say on the Eros figure. He believes that the Capitoline and the Eros figures are both copies of one and the same great original, the Thespian Eros of Praxiteles. As the details of this argument are largely philological, we do not reproduce them here. The Thespian Eros was the one for which Praxiteles found the suggestion in his own love for Phryne. Eros is represented there as himself love-smitten as well as smiting. This is the thought at the bottom of that art type which certainly appears in both the figures in question, the type which represents Eros plunged in melancholy, gazing intently (ἀτενιζόμενος), lost in thought. It was a conception thoroughly in the manner of Praxiteles, and this intent, wrapt, love-smitten gaze we undoubtedly see in the Ephesus figure. Taken as Eros it helps us to a conception of his idea of the love-god, whether or not we take the figure for an actual copy of his Thespian Eros.

NOTES.

ONCE more we have before us that pathetically amusing document, the Annual Report of the Society for the Protection of Ancient Buildings, recounting the few successes of the Society and the numerous snubs they have received, their own queer ideas on the relation of modern buildings to ancient remains, and the equally queer ones, in another direction, of some of their antagonistic correspondents. In the present Report the absurdities are, perhaps, pretty evenly divided on the two sides; at all events, more evenly than usual. The letter from some one concerned in the matter of Saltfleetby Church, Lincolnshire (no clue is given as to whether the writer is architectural or clerical, probably the latter), in which the Society are assured that the most reverential attention has been paid to the conservation of the ancient church, by pulling it down with the view of using the whole of the materials in the new church, is unquestionably very pretty reading for archæologists of a cynical turn of mind. The society have scored a quite unexpected success in obtaining the consent of the Benchers of Lincoln's Inn to retain the old gateway into Chancery-lane,—a success the more marked as the work is known to have been in the hands of a certain too notorious legal architectural cobbler, who would probably have delighted to pull down the gateway if only to cause annoyance to the Society. Archæological sentiment seems, however, to have penetrated the legal minds of the Benchers to this extent, and the gateway remains. Its value is exaggerated by the Society, but seeing how unlikely it was under present circumstances that anything tolerable would have been put in its place, its retention may be considered a clear gain. The fine design for the re-building of the east end of St. Bartholomew's Church, of course, is stamped with obloquy by the Society, who would prefer, we gather, to leave the bare wall and the iron columns, which we presume they would consider as interesting examples of the taste of a former generation. The best thing in the Report is, perhaps, to be found in the letter about Puncknoll Church, Dorsetshire, where the Society, after taking upon themselves to explain to the Rector that, as his church will seat one-fifth of the population of the parish, it is impossible he can reasonably want it enlarged, add, "the addition of an organ-chamber and a vestry would go still further to spoil the church as a Mediæval building." So that, according to the views of the Society, a church in regular use for modern worship is not to have an organ or a new vestry, because the rest of the church is old. Is it any wonder that some architects refuse to give any attention or reply to the views of such silly and impracticable doctrinaires? The tone of what may be called polite impertinence which pervades the correspondence of the Society is enough in itself to put up the back of any man of spirit and possessed of a healthy contempt for humbug.

THE rejection by a Select Committee of the House of Commons of a part of the Salford Corporation Bill forms another incident in the history of the Manchester Ship Canal. The Salford Corporation desired to contribute 250,000*l.* towards the capital required for the construction of the canal, and the matter occupied the attention of the Select Committee for two days, resulting in a refusal to grant the powers sought for. This is a victory for the railway companies, who have, of course, persistently opposed the whole scheme as calculated to endanger their interests. They are large ratepayers to the Salford Corporation, and naturally objected to being compelled to contribute towards a competitive concern. This is another hitch in the progress of the scheme, the preliminaries of which are proving very costly, and it is to be hoped that when carried out it will justify the expectations which have been formed respecting it. The railway companies evidently regard it as a dangerous rival, and it seems probable that were the existing waterways of the country less under the direct and indirect control of the railways they would be of more advantage to the trading community than they are now.

AMONG the Bills which a General Election would put an end to for the present session is that for the better prevention of fires within the metropolis, which was set down for the second reading on June 25th. It is probable that, though it may be temporarily shelved, it will sooner or later become law. It must be confessed that its title is not altogether appropriate, for it does not seem necessarily to be a measure which will prevent fires. Stated in half a dozen words, it is a Bill to authorise inquiries into fires when damage to the extent of 500*l.* has been done, and the origin of the fire is unknown, or when the Chief Officer of the Fire Brigade shall report that the circumstances of a fire are proper to be investigated. The inquiry is to be held by a Commissioner to be appointed for the purposes of each particular inquiry. As most fires in the metropolis are caused by some trifling and common piece of carelessness, the results of inquiries are scarcely likely to lessen the number of fires, unless it be by a constant recommendation of certain structural arrangements of buildings. On the other hand, it is certainly advisable that these accidents should be carefully investigated, just as much as railway accidents or explosions in mines.

REFERENCES have once or twice been made in our columns to the Sanitary Registration of Buildings Bill, which was read a first time in the House of Commons on the 2nd inst. The Bill, which is backed by Dr. Farquharson, Sir H. E. Roscoe, Sir Guyer Hunter, and Dr. Cameron, was originally drafted by Mr. Mark H. Judge, and was brought in at the instance of the Sanitary Assurance Association, who, while desiring that legislation should take place with the

view "of affording some guarantee that every dwelling-house shall be reasonably fit for habitation," do not, we are pleased to note, desire the establishment of a central authority for the stereotyping of even the best system of sanitation, but they wish, as they say in a petition which they have presented to the House of Commons in favour of the Bill, "to see a law enacted which shall empower the Local Authorities to demand the certificate of some competent person or corporation that the sanitary arrangements of any building are satisfactory before it shall be lawful for such building to be occupied."

A REPORT has recently been made to the Town Council of Antwerp which contains matter of interest in regard to the questions of water-supply and sanitation. The long-continued drought of the summer of last year, and the sudden increase in the consumption of water caused by the Exhibition at Antwerp, prevented the water-purifying apparatus used in that city from completely destroying the marshy taste and smell which characterise the water of the Nethe. The fear of cholera, then raging in Spain, caused additional anxiety, and a Commission of five chemists was appointed to examine into the matter. The report in question was made by this body, and after dealing with matters of local interest, it discusses the process of purification and its theory, the general arrangement of the waterworks, the cause of the marshy taste and smell, and finally the result of the examination of the water with reference to microbes and bacteria. The conclusions arrived at were,—that the water was never unwholesome, in spite of the unpleasant taste and smell, and that all doubts about the efficacy of the purification of water by means of iron applied through the instrumentality of revolving purifiers must fall before the researches of the English scientific men who have investigated the subject, and before the labours of the Commission itself, which confirmed their conclusions to the fullest extent. Particulars of the investigations on this subject referred to will be found in the Minutes of the Proceedings of the Institution of Civil Engineers, vol. lxxii., p. 24, and vol. lxxxi., pp. 279 and 285.

A CORRESPONDENT writes:—"Some of your readers may be interested to hear that at an auction held the other day in Old Bond-street several well-authenticated relics of ancient Carthage, collected by Count D'Hérisson, from recent excavations, were exposed for sale. Among these were two mosaics, in excellent preservation, each about 3 square feet in size. The one represents a nude youth sitting beside a woman dressed in a peplum and wearing a crown of rushes; the other a youth, also nude, on whose shoulders is an eagle. They were discovered near Tunis, in a garden at Danar-el-Sciat, situated in the midst of the ruins of ancient Carthage. The subjects of the two mosaics have been arbitrarily entitled 'Peace' and 'War,' but they are probably mythological rather than allegorical representations. The first might possibly be intended for Paris and Helen, the second for the Abduction of Ganymede. They are evidently Greek and not Roman in character, while the superior excellence of their design shows them to have belonged to an earlier and more artistic age than the mosaics discovered at Pompeii. These mosaics seem to point to Carthage as the originator of mosaic art. Ancient Greece has left no traces of it, while its development in Italy is much later. Carthage, with her wonderful variety of coloured marbles and the world-famed skill of her craftsmen,* may well have originated the idea. Whether she possessed indigenous *artists* of any merit is a question, but her skilled craftsmen may have worked from Greek designs, or even made copies in tesseræ of Greek paintings. Roman mosaics have also been discovered on the site of Carthage, but these are evidently later than the Carthaginian, not only because they are less deeply imbedded in the soil,* but also because they are inferior in design and execution, and not even so well cemented. The two above-mentioned specimens, besides some superb pieces of Carthaginian pavement, were purchased for Mr. Edwin Long, R.A."

* Homer calls them πολυδαίδαλοι.

ALL lovers of the picturesque will regret to hear that the scene of the market at Siena is shortly to be transferred from the Piazza del Campo to the open field behind the Palazzo Pubblico, in the centre of which a common-place open erection, consisting of a roof of red tiles, supported by a series of red brick piers, has just been completed. This is the more to be regretted, when it is known that the chief reason for the change is not sanitary, or for extra convenience of buyers or sellers, but because, forsooth, of the untidy appearance it gives to the historic piazza. It is true that one of the most romantic sights in Italy is this piazza at night, when there is a full moon, the Palazzo Pubblico and the Mangia tower casting their great sprawling shadows even upon the houses opposite. Then the feeling of desolation and want of life is the great charm; but in broad daylight one will sadly miss the busy crowds of *contadine*, with their enormous-brimmed straw hats, seated at their awning-covered stalls, bargaining *altissima voce* with the matrons of Siena. This so-called improvement was initiated by the same member of the municipality who advocated the removal of the Early Renaissance chapel at the foot of the Mangia tower, in order to restore the symmetry of the Palazzo Pubblico. Fortunately, he did not carry the day in this suggestion, and now,—rest his soul,—he is removed from the affairs of Siena to another sphere, where it is to be hoped his Vandalisms may be forgiven him.

ANOTHER, and perhaps more famous market-place of Italy, has also suffered, viz., the Mercato Vecchio at Florence, the scene of many an exciting gossip in Mediæval times, and once overlooked by the workshops of many world-renowned artificers, in particular the honest independent curt old smith, Niccolo Grasso, or Caparra as he was usually called, who executed, among many other well-known works, the spirited *braccialetti* at the angles of the Strozzi Palace. This piazza is now enclosed with a tall hoarding, behind which the myrmidons of the Florentine Hengler display their feats of horsemanship to the gaping public. Of yore it was certainly a very untidy and dirty quarter; but it was "picturesque dirt." Now, however, even that cannot be said for it,—even the delightful view of Giotto's Campanile and Brunelleschi's dome has been cut off by this hoarding. Surely the Florentines could find some open space on the outskirts of the town more appropriate for the site of a circus than a historical piazza in its very centre.

OF all things in the world to get into Chancery the last one would expect would be the ancient boat of Brigg. However there it is, and the dispute will probably give rise to some interesting legal question as to its ownership. Meanwhile it seems clear that it should become the property of the nation and be shown, without charge, to any one, and not, as at present, be the means of putting shillings into the pockets of some one. The proper resting-place would be somewhere near where it was found, for it is a mistake to carry off local relics to the British Museum or to London, instead of adding to their interest by the local characteristics with which they are connected.

WHATEVER may be the advantages, or disadvantages, of a building "boom," there can be no doubt that archæologists should feel indebted to it for much valuable information, and for the discovery of many archaic treasures. There are few cities which cannot show examples of this kind at some time or other, Rome being the latest, and, perhaps, the most fertile of any. On various occasions we have chronicled the finding of many specimens of statuary or mosaic pavement, not the least important of these being the bronze figures dug up during the excavations for the new Opera House in the Via Nazionale. Mr. Newton considers that one of these, which represents a boxer waiting his turn to be called into action, is of the school of Lysippus, and of a date between 300 and 200 B.C. Some day or other, when there is more money to spare in the coffers of the Roman municipality than there is now, a noble museum will be added to the interesting sights of Rome, filled with the discoveries of the last few years, but which are now, for want of room, stowed away under the care of Professor Lanciani.

* Roman remains at Carthage are found at depths of 3 ft. below the surface of the ground, Carthaginian at never less than 10 ft. (Davis).

EVEN in these poverty-stricken days it appears that money can be found for *bric-à-brac*, especially if the articles on sale can be proved to be of undoubted parentage and pedigree. At a sale the other day at the Hôtel Drouot in Paris, some astonishing prices were realised. Amongst them were a couple of vases of Urbino faïence, which went for 67,000 francs; while a cup of the same date (at the commencement of the sixteenth century), with decorations attributed to Andreoli, was sold for 11,000 francs. Amongst other "unconsidered trifles" were an ovoid glass with painting in *grisaille* by Pierre Raymond, which went for 10,000 francs; a glass of Venetian blue for 13,000 francs; and a small copper with plaques of enamel for 8,600 francs.

THE *Allgemeine Zeitung* quotes a letter from M. Maspero reporting his progress in the great work of excavating the buried sphinx of Gizeh. The workmen have got down as far as the paws of the creature; on her right hand are a number of Greek inscriptions (*προσκυνήματα*) of imperial date. It seems that the paws were hewn out of a kernel of living stone, and built round with stone work; the surface of the stonework was painted red with articulations in yellow. The excavators have now got down below the level formerly reached by Mariette and Carglia, and they are now at work in layers of sand, which have lain undisturbed since the first centuries of our era. This sand has become exceedingly hard, and, in fact, has coagulated into a material more like stone. The face of the sphinx has always been exposed to about 15 mètres, but we are glad to learn from M. Maspero that on laying bare the lower part the expression of the Sphinx has greatly gained in "serenity and cheerfulness." She has borne her long imprisonment well. M. Maspero still needs an additional 10,000 fr. completely to free this captive of the ages.

THE last number of the "*Notizie degli Scavi di Antichita*" reports the discovery of a mosaic of considerable importance at Chiusi. Some workmen came unexpectedly on the pavement in digging a watercourse at the foot of a hill near Monte Venere, on the property of Cav. Giovanni Paolozzi. The mosaic is in all 6 by 4 mètres in size. The centre part represents a double hunting scene; in the top row are three stags pursued by one hunter armed with a spear, below is a boar pursued by two hunters armed respectively with axe and lance. The centre design is excellently preserved,—perfect, in fact, but for a few scratches made by the pickaxes of the workmen at the moment of discovery. It has been carefully taken up by the owner and removed to his private museum. The rest of the pavement is left *in situ*. It is the first piece of mosaic that has been found in the neighbourhood of Chiusi.

AT Messrs. Boussod & Valadon's rooms in New Bond-street there is, in addition to the collection of Dutch paintings we mentioned the other day, a collection of oil and water-colour drawings by Miss E. M. Osborn, illustrating the scenery of the Norfolk Broads. These show much artistic power and feeling,

and have a special interest from the peculiar character of the scenery. In "Belaugh Marshes" (4) we have a sunset over a network of watercourses which twist like a red ribbon through the landscape. We see the flat-bottomed Norfolk craft, built for navigating shallows, threading their way through the winding canals, coming down before the wind "On the Bure, Yarmouth" (21), or pursuing the apparently hopeless task of working to windward along a narrow channel which turns this way and that at every fifty yards, as in the "Breezy Morning, Belaugh" (11). A morning effect under the title "Gossamer" (7), with the swans coming along mid-stream in procession through the mist, is a peculiar and charming effect very well represented. There are twenty-two small oil paintings and about twice the number of water-colours, containing much that is worth looking at.

THE *Pall Mall Gazette* of Monday published an ill-tempered but amusing reply from Mr. Ruskin to some innocent evangelicals who asked him to subscribe to pay off the debt on Duke-street Chapel, Richmond. Why, he asked, did they build churches they could not pay for? Why not preach behind the hedges rather than run into debt? "and of all manner of churches thus idiotically built, iron churches are the damnablest to me." In the latter sentiment we are disposed inwardly to concur, though we do not wish to emulate Mr. Ruskin's peculiar and rather pronounced phraseology.

UNDER the heading "Naval and Military Intelligence," a communication appeared in the *Times* of the 9th which it is impossible for any who feel concerned in the efficiency of our marine artillery to read without a very disagreeable kind of interest. It is there stated that on the previous day "the barbette ship *Impérieuse* made a protracted and thoroughly satisfactory trial of her multifarious armaments and gun-mountings at Portsmouth." In the course of this "thoroughly satisfactory" trial it appears that at the first fire from the barbette gun at its extreme angle of (horizontal) training, the flash set on fire some of the ropes in the vicinity. In succeeding rounds "Several misfires occurred either from defective tubes or the results of insufficient handling, and the last round was considerably retarded by the giving out of the spindle by which the breech-piece is pushed into the breech." In succeeding trials of other guns "only a few misfires occurred," but on the starboard guns being fired with 50 degrees of training "the blast carried away several clutches and forced open one of the ports." This, we learn, is "not insignificant," as it shows that the blast "would probably prevent the 6-in. guns nearest the midship barbettes from being worked in action." If this is a "thoroughly satisfactory" trial, what is an unsatisfactory one like? Or was it a misprint, and should it have read "thoroughly unsatisfactory"?

WOOD CARVING, POTTERY, AND GLASS EXHIBITED IN INDIAN COURTS.

COLONIAL AND INDIAN EXHIBITION.

No nation in the world can surpass the inhabitants of India in skill and hand-cunning, and that patient industry which the savage exhibits in the carving of his canoe-paddles and war-clubs, though with the Hindoos (using this name in a general sense) this quality has been refined and directed to the best results by centuries of practice, and nowhere is this marvellous hand-cunning exhibited to greater advantage than in their wood-carving. The instinct of nearly all Oriental races is to decorate a surface by breaking it up, so to speak, with a more or less intricate pattern, often in slight relief, and by this means great richness of effect is obtained. The Hindoos have great fertilty of resource in designing these diapers, witness some of the screens, which have hardly two panels alike, though the difference is only noticeable on close inspection, which will further reveal the fact that there is a marked character and likeness running through all their work, the same *motifs* being introduced, with very slight variation, again and again. In giving a few illustrations of the Indian wood-carving we have endeavoured to select typical, interesting, and *various* specimens of their work,—specimens that may be taken as representative of what is best in Indian work.

Figs. 1, 2, and 3 are from the central provinces. Figs. 2 and 3 are thoroughly characteristic in design and workmanship, the carving being in slight relief, having the appearance almost of having been laid on in the form of a fret. Fig. 1 is more elaborately carved, and is very rich and flowing in design, and withal simple, so that it is effective at a distance.

The remaining illustrations are from Burmah. The scroll-work in figs. 4, 5, and 6 is very finely carved in much higher relief than is usual with Indian work, and the design, too, is much more flowing and "Classical." In fact, in all Indian work, as we have often before noticed, we find well-known Classical *motifs* introduced again and again, and handled in a way characteristic of the workers. We give the palm to the Burmese for wood-carving, both for design and workmanship. There is a sideboard back exhibited, composed of interlacing scrolls, which might have been wrought by Grinling Gibbons himself. The Burmese are fond of grotesque heads, half animal, half human, and several instances of these may be seen on the screens in front of their exhibit.

Fig. 1.

Fig. 2.

Fig. 3

Fig. 4.

Fig. 5.

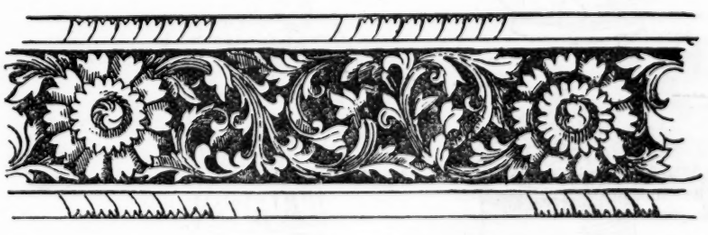
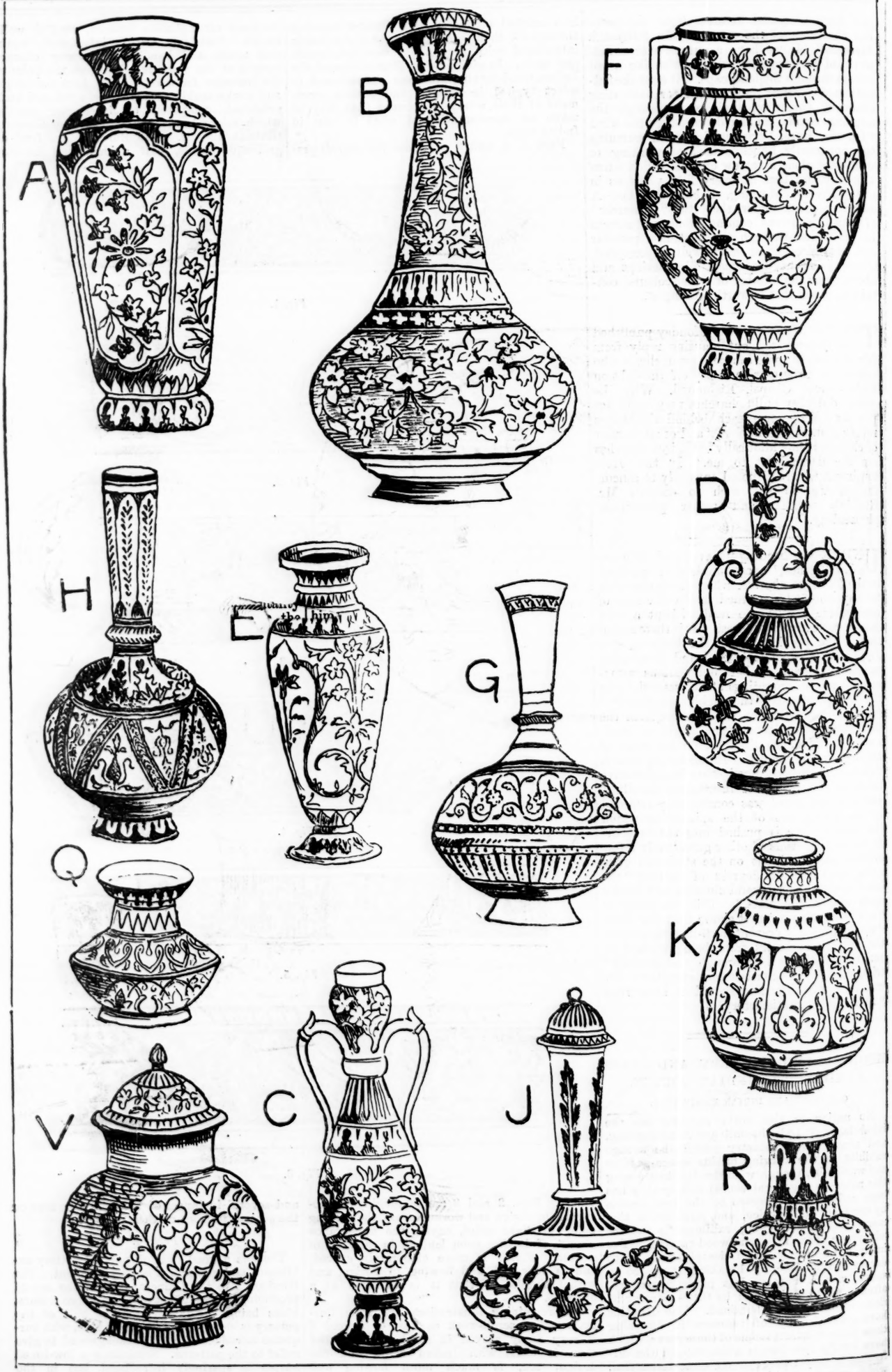


Fig. 6.

Pottery.

There is a good deal of painted pottery exhibited, and some of it is very excellent. The Hindoos, like the Chinese, possess the art of producing the best effect with one or two colours, blues being the favourite. The bulk of the pottery is decorated in a deep blue, with turquoise introduced into the background to give relief to the patterns. Sometimes a low-toned purple is sparingly introduced, but in the majority of cases only the two blues are used.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PATNA GLASS
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In selecting our illustrations we have been guided by two considerations,—beauty of shape and skilfulness of decoration. Most of the Indian shapes are graceful and effective, and admirably adapted for decoration, a most important consideration in painted pottery, and one not sufficiently studied by Europeans. Simple shapes are the most effective, and most of the shapes here figured are simple. The Indians are apparently more restricted than the Chinese in the matter of shapes, and the same form will be seen again and again in different sizes and with slight modifications. Figs. A to I, in the pages of sketches in this number, are from Mooltan, Punjaub, and are entirely of native manufacture. The decoration will be found to consist of about three *motifs*, which occur in all their pottery. The decoration on figs. A and D is one type, that on E and the neck of B another type, and that on F and J another type. The beauty of this pottery is mainly due to the glaze, which gives a charming softness to the colours, and is in itself brilliant and soft without being "shiny." De Morgan in his tiles has perhaps approached nearer this kind of glaze than any other pottery painter in this country.

Fig. G is decorated with raised and incised ornament glazed with a soft yellow glaze. There is also a case of rather rude-looking pottery glazed with soft colour glazes, but they were not of sufficient merit to warrant us giving sketches of them.

Fig. I is part of a large vase, and shows clearly the type of ornament commonly used in this Punjaub pottery. The outline is a deep purplish blue, and the background pale turquoise.

Figs. J and K are from Bombay. The decoration is in black on a peacock-blue ground, and the effect is very rich and unique. That in black on a green ground is not as satisfactory. The Bombay pottery is produced under the direction of the school of art, and some critics think that the work is in consequence less characteristic than that of Mooltan, for instance. There is a slight hardness in some pieces, we must admit.

Figs. L to S are from Jeypore. The decoration on Fig. O is very Persian in character. That on Fig. P is very daring, and is not ineffective.

The last three figs., T, U, and V, are from Rampore native state. Some of their pottery (figs. T and U) has a dark rich green ground with the decoration in white slip coloured turquoise. The effect is very striking. There is also some red terra-cotta pottery, decorated in slip, and coloured blue and turquoise, which has something fresh about it. All the pottery we have figured is painted under the glaze. Looking at Indian pottery generally, it will be noticed that the Hindoos prefer to space out the surface, and decorate the different spaces, to adopting the Japanese method of letting the decoration cover the surface without occupying the space to be decorated. Their decoration may be termed geometrical in character, there scarcely being a single piece painted in the free manner of the Japanese. The effect of their pottery is bold and effective, owing to its simplicity, and will well repay the attention of English designers and craftsmen.

Glass.

The only town exhibiting any notable glass is Patna, and we give sketches of five pieces to give an idea of the class of glass it is. The glass itself is both transparent and opaque, and varies from white to turquoise, blue, green, grey, yellow, and mauve. Some of it is fluted, but the bulk of it is plain. Two or three specimens are decorated with ornament in gold. Hindoo glass is of much less merit than the pottery, if this Patna glass may be taken as representative; and evidently glass is little used by the natives, who prefer pottery and metal work.

The Institution of Civil Engineers.—At the first meeting of the present Council of the Institution, Mr. H. L. Antrobus was re-appointed treasurer, Dr. William Pole, F.R.S., honorary secretary, and Mr. James Forrest the secretary. From a new edition of the list of members, corrected to the 3rd inst., it appears that there are now 1,558 Members, 2,187 Associate-Members, 499 Associates, 20 Honorary Members, and 910 Students, together 5,174, against 4,884 at the same date last year.

ARCHITECTURE AT THE ROYAL ACADEMY.—VII.

CONTINUING the subject of domestic architecture, we notice next No. 1,619, "Arundel and Fitzalan Houses, Arundel-street, W.C.," Mr. John Dunn. These are the group of chamber residences facing the Thames Embankment, which form a block of buildings in a very tame late Gothic style; they look better in reality, however, than in this weak and spotty drawing. No plan.

1,620, "St. Bride's Vicarage, Fleet-street," Mr. Basil Champneys. A pen elevation of the house of which we published a view in the *Builder* of May 22, with plans, which are not appended here. It is a successful reproduction of the London house of the eighteenth century, and is in keeping with its surroundings, but certainly looks tame enough in this line elevation. It is a pity the plans were not added, because they show very good practical dealing with an awkward and restricted site.

1,621, "House at Bickley, Kent," Mr. Ernest Newton. A very homelike house in cottage style, simple and unaffected, shown in a good pen drawing, and with the distinguishing merit of having a plan appended.

1,624, "Mourne Park, County Down," Mr. John Birch. What is called an "imposing pile," shown in a large and effective pen drawing, a square tower with angle turret in the rear standing boldly in the centre of the group of building. As far as one can see, it does not look interesting in detail, and seems to have no central idea in its design; a number of parts put together. No plan.

1,626, "Abbeystead, Wyresdale, Lancashire," Messrs. Douglas and Fordham. A pleasantly-designed domestic Gothic house, with a good deal of character; long, low, diversified in the outline of the plan, which is not given plan-wise, however, but can only be judged of from the perspective. Behind the domestic-looking façade (under part of which runs the carriage-drive beneath a segmental arch), is apparently a square "keep," with a castellated turret at the angle. This, if modern, is an anachronism, though it certainly serves to contrast very well with the character of the front buildings. A plan might have shown us its justification, real or supposed.

1,629, "New House at Scarborough," Mr. E. J. May, looks like a sketch of an old tumble-down house, selected from the point of view of the picturesque. If the size of the windows is correctly represented, the "new" house must be decidedly deficient in light and air.

1,634, "Saltskog, near Stockholm, Sweden," Mr. Howard Ince. Apparently a timber house, after the (constructive) manner of the country, with a certain amount of English feeling imported into it. The balconied recess under the gable is a good feature. Sketches of the hall and of the staircase-window are added. The design is picturesquely grouped, and there is more variety of incident in it than is usually found in a house of that size. No plan.

1,637, "Houses at Barnes Common," Mr. Herbert Read. Hung high; apparently picturesque, but rather too manifestly intending to be so. No plan.

1,640, "New Studios, South Kensington," Mr. W. Flockhart. There is no doubt a great deal of character in this front, particularly in the treatment of the windows, which, in the first floor, are mullioned five-lights, with a decorative panel formed over three of the lights, above the line of the window-head. The "character" in the twisty-twirly gables is overdone; the projecting curls look as if they would be certain to chip off some day. No plan. The drawing (pen and ink) is a bold and effective one.

1,645, "Rebuilding of 125-129, Mount-street, Grosvenor-square," Mr. W. H. Powell. Skied, and difficult to see. Apparently a rather "broad" treatment of the mass of building in a dark-and-light-stripes manner (what profane persons used to call the "streaky-bacon style"), but the heavy façade has little but plate-glass to stand upon in the ground story. No plan.

1,649, "Residence, Shrewsbury," Mr. T. M. Lockwood. A brick and half-timber house, got up with great propriety, but without a touch of originality anywhere. Drawing mannered and hard, and makes us wonder, like some others, why it was placed on the line. Another view of apparently the same house is shown in No. 1,663, which appears more interesting, but is hung too high to be seen well. No plan.

1,650, "Croft Stables, Stanstead, Essex. Back View," Mr. W. D. Caröe. The front view is shown in No. 1,657. Very good drawings, especially 1,657, which would have been much more worth placing on the line than some that enjoy that honour. Buildings picturesque decidedly; how far in detail suited to their practical requirements we cannot, of course, judge very well from picturesque drawings. The author is to be commended for appending a plan, in which he shows the harness-room in the right place, adjoining, but not opening into, the stable. Whether it is advisable to have so close a communication between the coachman's parlour and the stable may well be questioned, and the small staircase and partition wall from it, jutting into the stable, makes the way to number four stall rather awkward steering for the horse. From the scale it appears that the stable-door for the horses is only three feet wide,—much too narrow. Very few of the "picturesque" architects really know how to build stables.

1,652, "Beeston Lodge, Cheshire," Messrs. E. Salomons and John Ely. This house, of which we published a view and plan some time ago, is shown in perspective in one of the best water-colour drawings in the room; a trifle heavy, perhaps, but very thoroughly worked out. The house is red brick with stone dressings, and stone mullioned windows below, with black-and-white work above; this upper portion oversailing slightly. The roofs are red tiled. The whole is exceedingly effective and rich, and the most of this has been made in the drawing. The design has, however, the defect of a certain want of refinement in detail, and a somewhat too obvious effort at effectiveness; the authors do not seem to have quite the pure gospel, so to speak. Still, it is a country house out of the common way, and evidently carried out with great care, and the plans, of which ground and first-floor are appended, are very good. Though on somewhat irregular lines, they are nevertheless convenient, and the rooms well-arranged in regard to each other, and the rooms and corridors are full of little unexpected points, embayments, flirtation corners, &c., which add so much to the interest of an interior, we do not mean specially in the view of flirtation, but for general interest and variety. A whist-gallery is placed at one end of the billiard-room, raised a few steps; this may have been the wish of the owners; we should *not* think it the most favourable position for playing anything worth calling whist, with the click of the billiard-balls and the calling of the score going on below, not to speak of the temptation to look away from the little green cloth to see what is the progress on the large one. The morning-room would be rather deficient in light, unless it gets a full level eastern sun, which there is nothing to show (*N.B. Points of the compass should be shown on plans*, especially those of dwelling-houses). But on the whole this is a noteworthy house. We might, for all we know, have been able to say the same of No. 1,607, which is a still better water-colour drawing, occupying a similar central position on another wall, had the authors of that also allowed us the chance by showing a plan; but they gave us nothing but a picture. A dwelling-house, of all other buildings, without a plan is only half, say only a quarter, illustrated; it may be a pretty house, but whether it is a good or a bad one no one can say.

1,670, "Wortley Vicarage, Yorkshire," Mr. Basil Champneys. A house with mullioned windows and Elizabethan curved and recurved gables, presenting no special features. The pen perspective is very spotty in effect, and produces the impression of the grounds being neglected and the place deserted. No plan.

1,673, "Houses in Cadogan-square," Messrs. Ernest George & Peto. A picturesque brown-tinted drawing (published in the *Builder*, of May 15) showing houses decorated with flat scroll ornaments in brickwork, and rusticated pilasters standing on corbels, and with no meaning or architectural function of any kind; but this is the fashion now, and the authors cater for it better than most of their contemporaries, though they can do much better things than this. No plan.

1,674, "Proposed Restoration of Glenbucket Castle, Aberdeenshire," Mr. R. T. Blomfield. A sketch should have been given showing the present condition of the castle; it is impossible otherwise to form a judgment about it as a restoration. The drawing shows corbelled out angle turrets, square and circular, after the

ancient Scotch manner, and an effective arrangement of windows under the eaves of the roof,—not, we think, in the ancient Scottish manner, but effective nevertheless. No plan is given; in fact, as a restoration of an ancient dwelling-house for modern use it is impossible to judge of it at all. It is a view of a modern-antique castle, and that is all.

1,675, "Wedderburn House, Hampstead," Mr. Horace Field. There is nothing objectionable in this; but what, in the name of goodness, are the claims of either drawing or design to be hung on the line? Who has been responsible for the hanging?

1,676, "Proposed House, Beckenham-place Park, Beckenham," Mr. John Ladds. A rather attractive domestic Gothic house, but with no particular principle of design manifest in it. The author is to be credited with the unusual merit of having appended plans; and perhaps it is rather unkind in the same breath to find fault with them; but while the drawing-room, library, and billiard-room form a connected suite, the dining-room seems unnecessarily thrust away from them; and, in spite of its contiguity to the kitchen regions, there is no way for the dinner (as far as we can see) from the kitchen to the dining-room except through the cut-off door in the passage, and in full view of the main hall and staircase. A serving-door may be intended, but is not shown. The two inner angle faces of the main hall also are rather shams, to produce an octagon which does not arise naturally out of the planning of the building.

1,679, "Stowell Park, Gloucestershire. North and South Elevations, Restorations, and Additions;" Mr. John Belcher. Neatly-drawn elevations of an old house, with portions in section, the meaning and object of which are, in the absence of a plan, absolutely unintelligible.

1,680 and 1,683, by Mr. Basil Champneys, are small pen sketches of various houses at Sunningdale, of no very special character, but quiet and domestic looking, which is probably what was aimed at. Wonderful to relate, plans are appended to all of them, in a sketchy but sufficient manner,—a fact which leaves us too surprised and impressed to make any further notes this week.

THE ANNUAL REPORT OF THE METROPOLITAN BOARD OF WORKS.

THE Annual Report of the Metropolitan Board of Works, for the year ending December 31, 1885, has just been issued, and it forms a record of a vast amount of heterogeneous work which has been done, and on the whole done well, by the Board,—which, whatever the anomalies and defects of its constitution, is nevertheless the only body exercising municipal authority (however limited to certain functions) over the metropolis as a whole.

With regard to sewerage and drainage, the Board has been engaged since the year 1879 in constructing in various parts of London additional large sewers by way of supplementing and relieving some of the sewers of the main drainage system, which in times of heavy rain were found to be inadequate to carry off with sufficient rapidity the enormous quantity of water which found its way into them. At such times the sewers were apt to overflow, greatly to the inconvenience of the inhabitants of some of the low-lying districts, and the new relief sewers have been constructed in order that the storm water may be more rapidly carried off, so as to prevent the occasional floodings. The new main sewer from Roehampton-lane, Putney, to the Clapham-road, with branches running into it at various points, is still in course of construction. The contract price for these works, commenced in 1882, is 151,995*l*. The new sewers for the relief of the Ranelagh and King's Scholars' Pond sewers, commenced in 1883, are virtually completed, the price for which the work was undertaken being 96,300*l*. To relieve Holloway and its neighbourhood from flooding, it was deemed necessary to make a new sewer, 17,700 ft. in length, commencing in the Holloway-road. A tender to execute these works for the sum of 78,509*l*. was accepted by the Board in November, 1884, and a total length of about 10,000 ft. has been completed. A new sewer at Eltham, which has cost 23,500*l*.; one at Lee, costing 5,836*l*.; and two at Hammersmith, costing together 8,353*l*., have also been completed; and the Queen's-road, Dalston, sewer, passing along Great Cambridge-street to the Middle Level Sewer in Bethnal Green-road, was commenced in February, 1885, the contract sum being 19,850*l*.

With regard to the sewage and the river Thames, the Report details the various steps which have been taken by the Board consequent on the report of the Royal Commission on Metropolitan Sewage Discharge, but this portion of the report is now "ancient history," as the subject has been prominently before the Board on two recent occasions, when we published full accounts of the Board's proposals.*

Having chronicled the steps taken by the Board to carry out the provisions of "The Metropolis Management (Thames River Prevention of Floods) Amendment Act," which empower the Board to require the wharfs, walls, and banks of the river Thames within the metropolis to be so raised as to prevent the overflow of the river, the Report goes on to refer to the metropolitan street and other improvements already carried out or in progress. At the date of the report the Board was still engaged in acquiring the property required for the formation of the new street from Tottenham Court-road to Charing Cross, authorised by the Street Improvements Act, 1877, and during the year claims to the amount of 160,038*l*. in respect of the property so acquired had been settled.

With regard to the operations of the Board under the Artisans' and Labourers' Dwellings Improvement Acts, the Board reports that only one official representation had been received by it during the year. The blocks of buildings already erected in the metropolis upon ground acquired and cleared by the Board under the powers of the Acts are 221 in number, and the number of persons housed in them is 21,678.

The Act of Parliament which empowered the Board to acquire and maintain for the free use of the public most of the bridges over the Thames within the metropolitan limits was passed in the year 1877, and the Report details the operations of the Board under the Act during the past year, and refers to the proposed establishment by the Board of ferries or other means of cross-river communication below London Bridge.

The parks, commons, and open spaces now under the Board's control have a total area of 1,834½ acres, the largest items being Blackheath, 267 acres; Hampstead Heath, 240 acres; Clapham Common, 220 acres; and Wormwood Scrubs, 193 acres.

Having given a *résumé* of Bills in Parliament promoted or opposed by the Board, the Report gives an account of the present position of the Metropolitan Fire Brigade, the total strength of the force being, at the date of the Report, 589 officers and men. There are 55 fire-engine stations, 26 street stations, 127 fire-escape stations, 42 land steam fire-engines, 87 6 in. manual engines, 37 small manual engines, 3 self-propelling steam fire-floats for river service, 4 steam tugs, 4 steam fire-engines on barges, 144 fire-escapes, 5 long fire-ladders, and 4 vans to carry the same, and 131 horses. The fires of 1885, compared with those of 1884, show a decrease of 19, but, compared with the average of the last few years, an increase of 441. The Board call attention to the fact that the expenditure upon the Fire Brigade in the year 1884 was found to be in excess of the income by 10,854*l*. 17s. 7d., and they point to the necessity of increasing the limit of that portion of the consolidated rate applicable to fire-brigade working expenditure from one half-penny in the pound on the *gross* annual value of property to one penny in the pound on the *net* or rateable value. They also ask for increased contributions from the insurance offices.

With regard to the water supply of the metropolis, the Report chronicles the gradual extension of the constant-supply system and the fixing of fire-hydrants.

The Board's powers and action with regard to gas-testing; tramways; telephone and telegraph wires; the prevention of the spread of cattle diseases; the inspection and registration of dairies, cowsheds, and milk-stores; the control of slaughter-houses and offensive businesses; the storage and transit of explosive substances and petroleum; and the supervision of "baby-farms" under the "Infant Life Protection Act, 1872," are all set forth in the Report, and their mere enumeration is enough to show how many really extraneous duties,—duties never contemplated when the Board was instituted,—have been thrust by Parliament upon the Board in the absence of any nearer approach to a metropolitan municipality.

When we turn to the financial transactions of the Board, we find that its revenue is equal to that of many a kingdom. The Board's expenditure during the year 1885, including 1,486,552*l*. advanced on loan to other local authorities, 1,197,892*l*. invested in Treasury Bills, and 225,533*l*. applied to the reduction of debt, has amounted to 5,543,181*l*., of which 1,644,280*l*. has been defrayed out of money raised by the issue of Metropolitan Consolidated Stock.

The Report details at length its procedure in the supervision of streets and buildings under the Metropolis Management and Building Acts, and the appendices include the reports of the Engineer and Superintending Architect on the work done in their departments during the year. From the report of the Superintending Architect we learn that the total number of building operations (for the year 1884) was 26,363, including alterations, the amount of fees received by the District Surveyors in respect of the same being 46,792*l*. 11s. 6d. It seems that the difference in the value of the several districts is considerable. The gross fees received in thirty-nine districts during 1884 varied from 22*l*. to 592*l*. In two of the districts the receipts did not amount to 100*l*. each; in four districts the receipts were less than 300*l*. each; in nine less than 400*l*. each; in eleven less than 500*l*. each; and in thirteen less than 600*l*. each. In thirty-one districts the receipts ranged from 608*l*. to 2,237*l*.

* See *Builder*, pp. 457, 505, *ante*.

COMPETITIONS.

The University College of Wales, Aberystwyth. We are informed that the Council of the College have awarded the premiums offered for the best three designs for new buildings at Aberystwyth in the following order: First prize of 100*l*. to Mr. Frederick Boreham, F.R.I.B.A., Finsbury-pavement, E.C.; second prize of 50*l*. to Messrs. Seward and Thomas, St. John's Chambers, Cardiff; and the third prize of 25*l*. to Mr. T. G. Williams, of Liverpool. The council, before adopting any of the plans referred to, have asked Mr. J. P. Seddon to prepare designs showing how the old building may be adapted to meet the requirements laid down when the specifications for a new college were considered. The ultimate decision as to whether the remains of the old college, of which a considerable portion escaped injury during the late fire, will be utilised, or an entirely new college be built, will depend mainly on financial considerations.

Harrogate Bath Hospital.—The Governors of the Bath Hospital and Convalescent Home at Harrogate, having decided on erecting a new building, recently instituted a limited competition, and appointed Mr. Waterhouse, R.A., assessor. They invited seven architects to send in designs, and Mr. Waterhouse decided in favour of that submitted by Messrs. Thomas Worthington and J. G. Elgood, of Manchester, who have received instructions from the committee to prepare the necessary working drawings, &c., for its erection. The outlay contemplated is about 17,000*l*.

A New Building Estate in Surrey.—In the neighbourhood of Woking, and within easy distances of the St. George's Hills and the rivers Wey and Thames, another large estate, about 60 acres, has been laid out for building purposes. The estate is the joint property of Mr. Alderman Norton, of Poole, and Mr. Alfred Gale, and is situated in the centre of a beautifully-wooded surrounding country, principally consisting of fir-groves and heaths. The roads have been laid out. The other works have been executed from the designs and under the superintentence of Mr. H. Humfrey Rumble, C.E., and building operations have been already commenced.

Metropolitan Board of Works.—We understand that among the numerous candidates likely to offer themselves for the post of Superintending Architect to the Metropolitan Board of Works is Mr. Gordon Smith, the present architect to the Local Government Board.

ELECTION OF TWO DISTRICT SURVEYORS.

AT the meeting of the Metropolitan Board of Works, on the 4th inst., the Board proceeded to the election of two District Surveyors for Chelsea, the old district having been, by resolution of the Board, divided into two (North Chelsea and South Chelsea), after the death of Mr. Sancton Wood. There were thirty-two candidates for the two appointments, viz., Messrs. T. Batterbury, H. H. Bridgman, H. Cheston, S. Flint Clarkson, P. Cowper, F. E. Eales, J. S. Edmeston, G. Edwards, R. F. C. Francis, W. Grellier, F. W. Hamilton, J. Hamilton, J. Hamilton-Gordon, W. J. Hardcastle, A. Harland, E. Haslehurst, A. Heyes, G. Inskipp, G. Jackson, G. A. Lean, H. Lovegrove, T. E. Mundy, R. C. Murray, W. Hilton Nash, H. A. Pelly, C. G. Saunders, M. L. Saunders, W. Smallpeice, L. Solomon, W. L. Spiers, W. H. Stevens, and H. W. Stock.

The preliminary voting to reduce the number of candidates to six was, for each appointment, taken by show of hands, as has been usual; but Mr. Williams, no doubt in view of certain circumstances referred to by us on the occasion of the last election,* moved as an amendment on the usual procedure that the subsequent voting on the reduced number of candidates be taken by ballot. This was negatived on being put to a show of hands, but a division being demanded, the amendment was carried by 28 to 23. After a long discussion as to the way in which the vote should be taken, it was resolved, on the motion of Mr. Lindsay,—

"That after having taken a show of hands for the first six candidates, each member write the name of the candidate he wishes to record his vote for on a piece of paper, and tender the same to the Clerk, and that one or more ballots be taken until the candidates are reduced to one candidate with a majority of the votes, and that the candidate be elected to the office, the same course to be taken in electing both officers."

North Chelsea.

The following were the six candidates selected in the preliminary voting, viz., Messrs. T. Batterbury, 30 votes; S. Flint Clarkson, 40; J. S. Edmeston, 29; W. J. Hardcastle, 38; T. E. Mundy, 33; and M. L. Saunders, 32. The following shows the result of the subsequent voting, the balloting papers being deposited by the members of the Board in a mahogany box (marked "Tenders") which was taken round by an officer, the papers being counted and the name of the candidate on each called out by the Clerk:—

	First Ballot.	Second Ballot.	Final Ballot.
Batterbury	4	—	—
Clarkson	19	23	25
Edmeston	5	7	9
Hardcastle	7	6	7
Mundy	6	5†	—
Saunders	5	5†	—

Mr. Clarkson, having thus received a majority of the votes cast, was declared to be duly elected, and he briefly thanked the Board.

South Chelsea.

The six candidates selected by show of hands for this appointment were Messrs. J. S. Edmeston, 25 votes: W. J. Hardcastle, 26, H. Lovegrove, 21; T. E. Mundy, 27; M. L. Saunders, 24; and W. L. Spiers, 16.

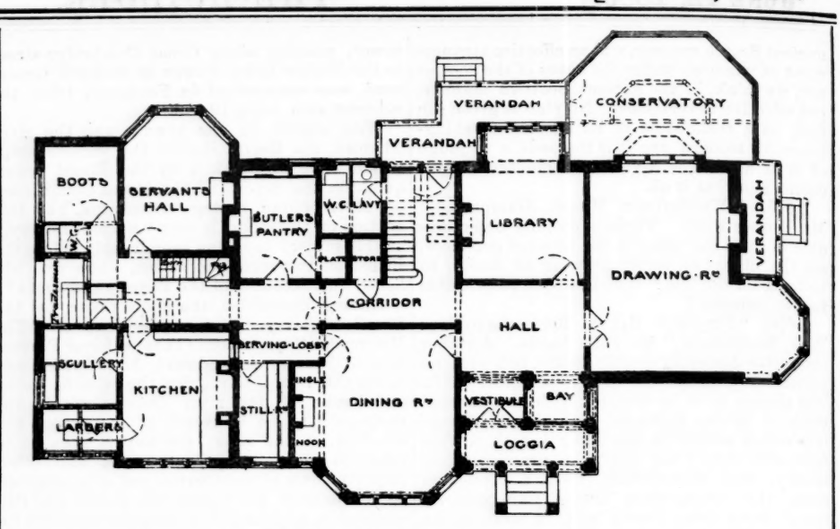
The balloting gave the following results:—

	First Ballot.	Second Ballot.	Final Ballot.
Edmeston	9	10	10
Hardcaste	9	8	7
Lovegrove	1	—	—
Mundy	11	15	22
Saunders	5	3‡	—
Spiers	6	3‡	—

Mr. Mundy, having received a majority of votes, was declared to be elected, and he also thanked the Board.

The innovation in the method of election, however necessary it may be, caused some delay and confusion, and it is therefore satisfactory to know that at the meeting of the Board to be held this Friday, June 11, Mr. Fowler will move, "That it be referred to the Works and General Purposes Committee to consider and report as to the future mode of conducting the elections of District Surveyors."

* *Builder*, pp. 192, 198, *ante*.
† Both these candidates were, by resolution of the Board, struck out together.
‡ Struck out together by resolution.



GROUND FLOOR PLAN

"Hatton House," Westgate-on-Sea.—Plan.

Illustrations.

CHURCH OF THE SACRED HEART, LIVERPOOL.

THIS church, designed by Messrs. Goldie, Child, & Goldie, of Kensington-square, was commenced in the spring of last year, and is now rapidly approaching completion. It stands on very high ground, and is consequently much exposed to wind and weather: hence the plan adopted for the atrium and principal entrance, which had to face the front and street below it.

The confessionals and priests' corridor were specially planned to meet special requirements, and to afford easy and direct communication between the presbytery (already built), the sacristies, and committee-room.

The chancel might have been deeper with additional effect, but expense and "utility" were special instructions to the architects. A substantial working and inexpensive church with tracery was the ideal, and this it professes to be, and yet nothing is scamped.

The walling is of Yorkshire rock-faced stone, with dressings of selected Runcorn stone of the neighbourhood, and beautifully built. All the arch stones, dressings, and mouldings of the interior are in stone comparatively simple, but carefully worked out and executed.

The contract price is a very low one, and great credit is due to Mr. Fogarty, the contractor, for the thorough manner in which he is carrying out his agreement, under the practical superintendence of Mr. Hinsley, the clerk of the works.

NEW BOARD SCHOOLS FOR LONDON.

THE Hackford-road Schools, Brixton, of which we give an illustration, are being erected by the School Board for London from the designs of the Board's architect, Mr. T. J. Bailey. They are planned to accommodate 1,000 children, with power of extension to 1,400, and the amount of the contract is 10,249*l*. The builder is Mr. Henry Hart. The drawing from which the illustration is taken is in the Architectural Room at the Royal Academy.

The Berner-street Schools, Whitechapel, are also being erected by the School Board for London from the designs of the Board's architect, and are planned to accommodate 1,200 children; the amount of the contract is 13,300*l*. The builders are Messrs. Atherton & Latta.

ADDITIONS TO "THE PARK," LEDBURY.

"The Park," Ledbury, is a manorial house of seventeenth-century date, and stands at the outskirts of the village, at the corner of the main street and the road which leads to Tewkesbury. The original building is ⅃ shaped on plan, and like other buildings of the village of which it is the most important, it is built of brick (rough cast on face) and timber, the portion facing the main street having five overhanging gables, which have a striking effect as seen from the market place. About thirty or forty years ago a wing was added towards the lawn, so that the house now forms three sides of a square. The present alterations are being carried out in the courtyard, with the addition of a new wing in continuation of the old portion which faces the side street. The style of the old house, which is the prevailing style of the more interesting parts of the villlage, is being observed in the new work, all that is shown in the present view being new. The architects are Messrs. Richard Coad & J. M. MacLaren.

"HATTON HOUSE," WESTGATE-ON-SEA.

THE above house, of which we give a view in this week's issue, is now in course of erection and rapidly drawing to a finish at the above-named sea-side place, and is carried out from the designs and under the superintendence of the architect, Mr. John Thomas Wimperis.

It is built with hollow walls faced with red bricks with stone dressings.

The dining-room, entrance-hall, &c., are fitted with old oak wainscoting with pilasters, doors, over-doors, mantels, &c., and recessed side for fireplace.

The ceiling is in ornamental fibrous plaster with large ribs and panels.

The library is fitted with walnut panelling, doors, and chimney-piece, with panelled ceiling, and the drawing-room with pine dados, and carton pierre chimney-piece and ornamental fibrous plaster ceiling, with handsome over-doors and dressings.

The staircase is in old oak with close string, carved and enriched balustrades and newels, and enriched soffits.

There are parquet floors to all the principal rooms and inner hall, and mosaic floors to all the passages and lobbies.

The stables are shown in the drawing and are just finished and provided with all the best and most approved fittings.

These latter buildings are executed in red brick, flint work, and timber.

Messrs. Wm. Corbett & Co., of Westgate and London, are the builders. The carving is done by Mr. Anstey, and the ornamental ceilings by Messrs. G. Jackson & Sons.

TOMB OF BISHOP WM. DE LA MARCHIA.

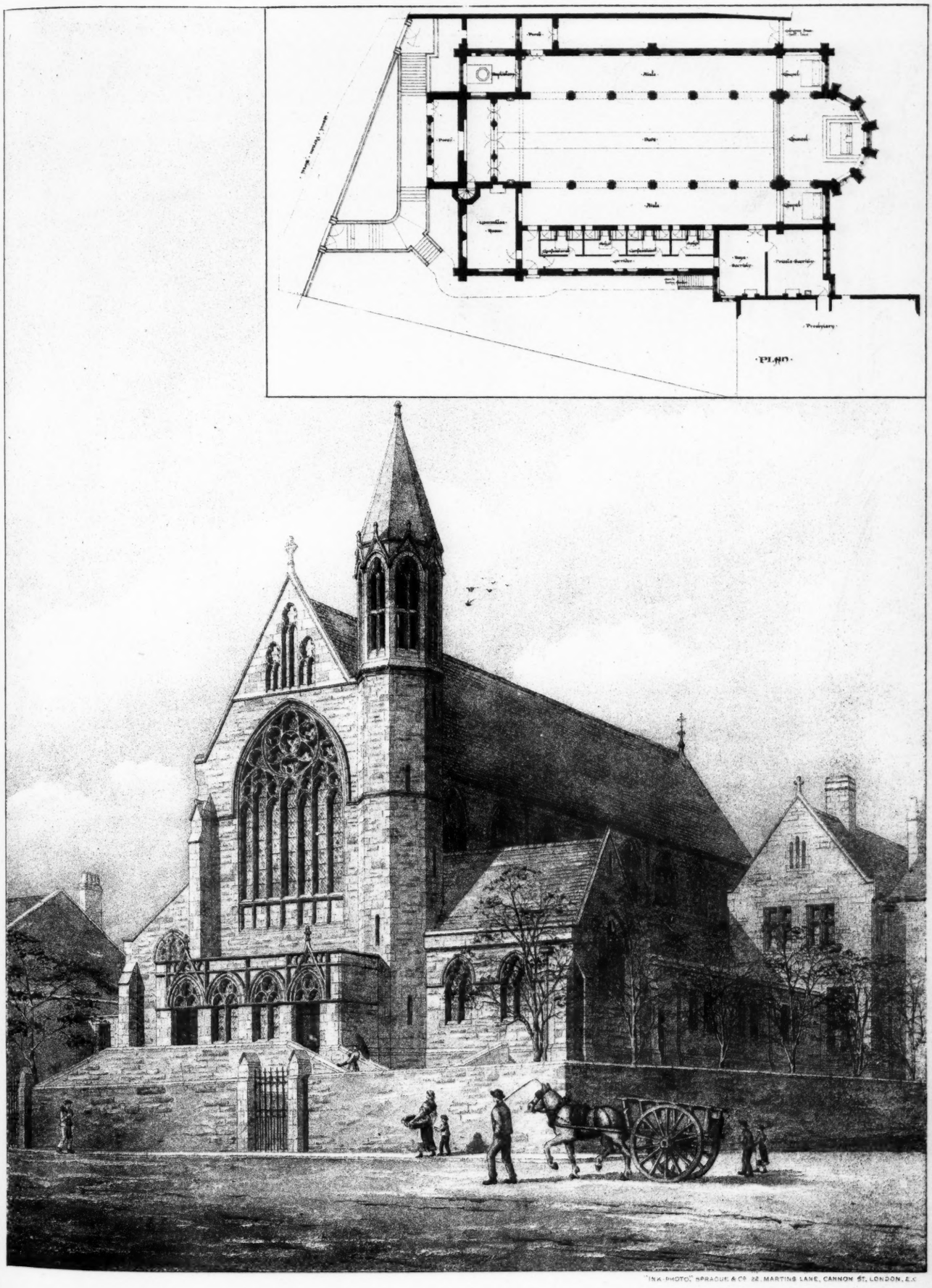
"A.A." TRAVELLING STUDENTSHIP DRAWINGS.

THIS tomb is situated in the centre of the south transept of Wells Cathedral, and is composed of Doulting stone. Considerable remains of colour still exist. All the foliage was gilded on a red ground. The diapered spaces are alternately red and green; the figures at the back are treated in red and green also. For further notes on colour, see details.

Wm. de la Marchia died in 1302. The beautiful octagonal chapter-house, with its approaches, is said to have been built during

NEW ORATORY OF THE SACRED HEART, LIVERPOOL.—Messrs. Goldie, Child & Goldie, Architects.

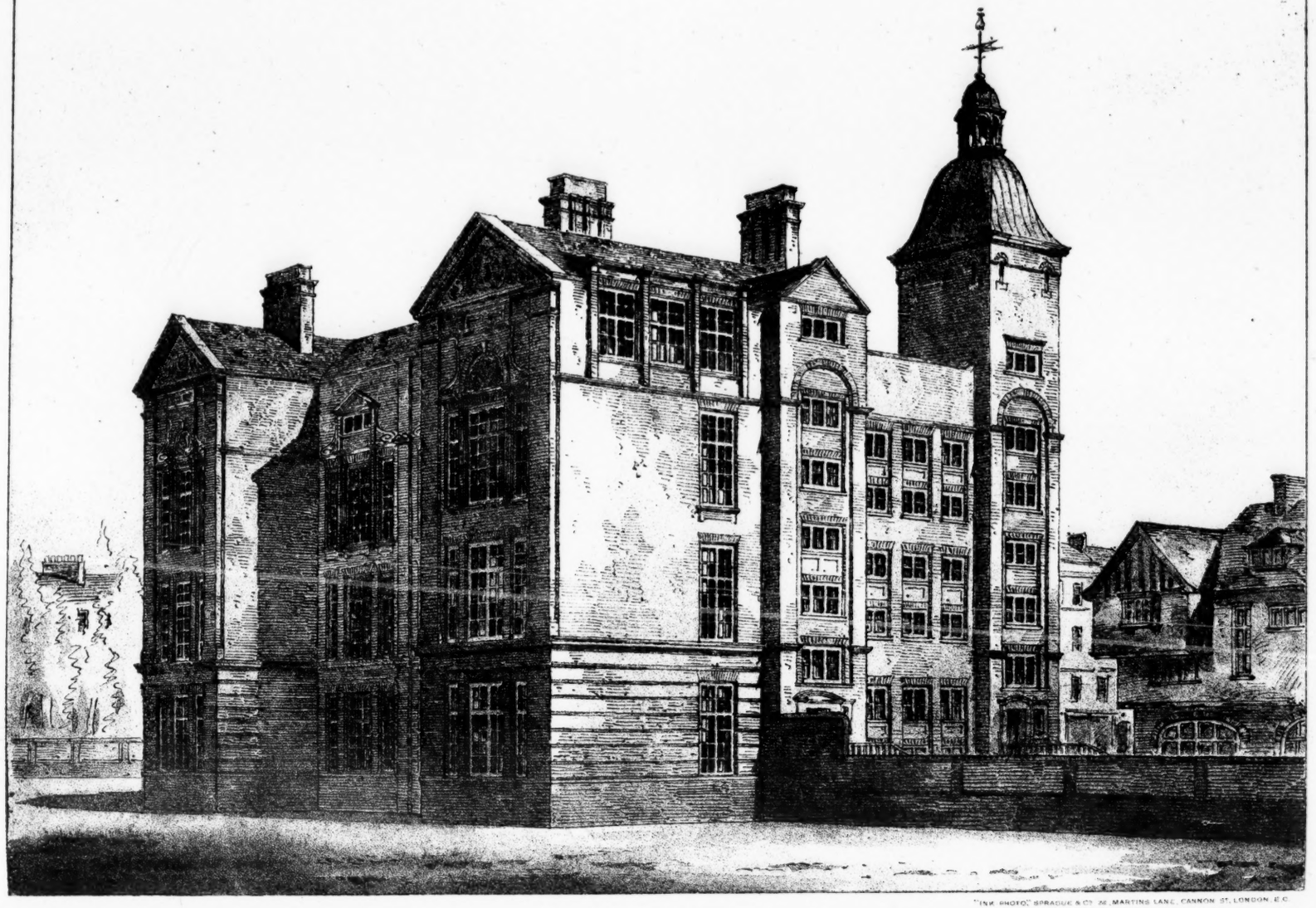
Interior View.



NEW ORATORY OF THE SACRED HEART, LIVERPOOL.—Messrs. Goldie, Child & Goldie, Architects.

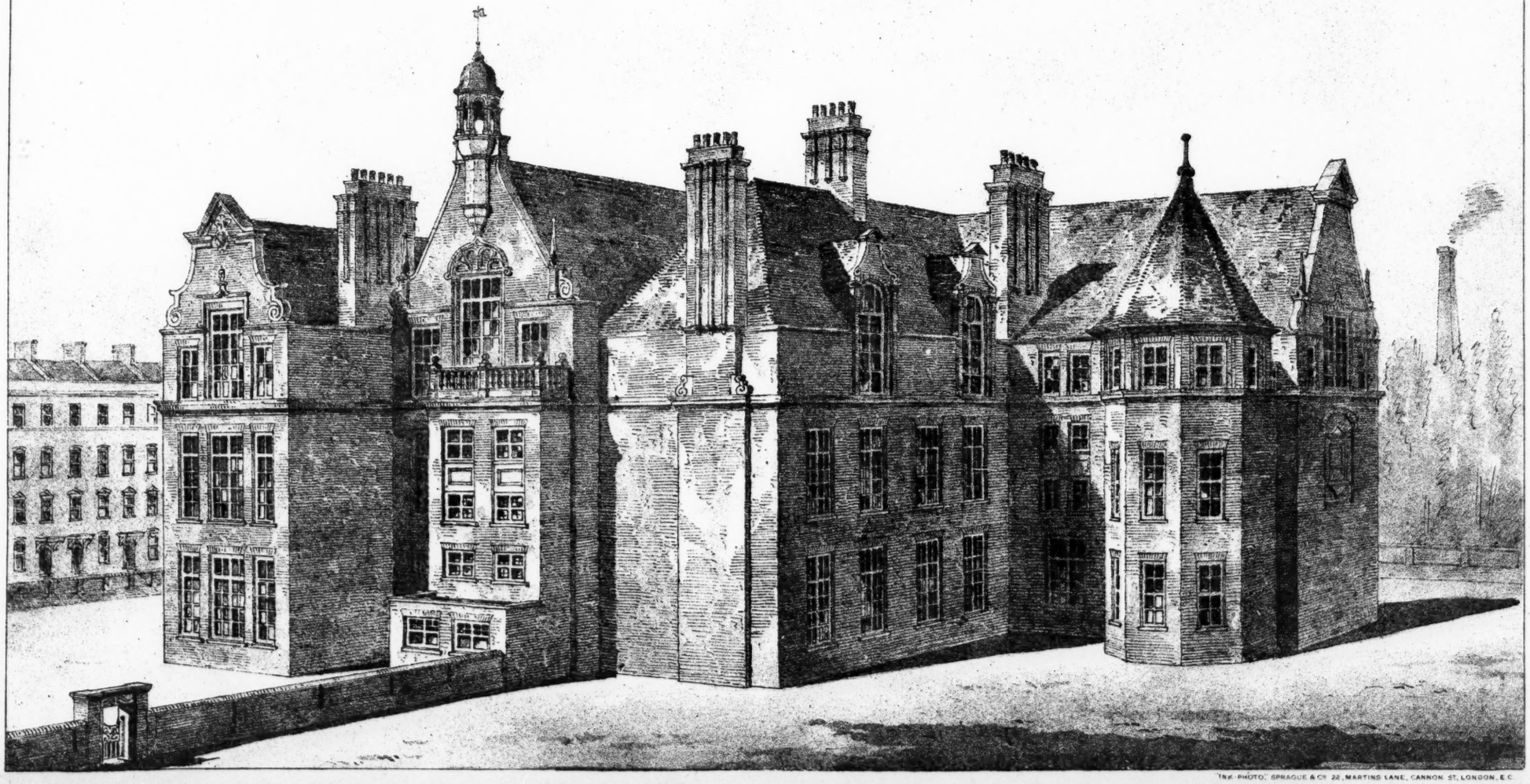
Exterior View.

· SCHOOL · BOARD · FOR · LONDON ·
· BERNER ST · SCHOOLS ·
· TOWER · HAMLETS · T.J. BAILEY ARCH.T



"INK PHOTO" SPRAGUE & CO. 46, MARTINS LANE, CANNON ST., LONDON, E.C.

SCHOOL BOARD FOR LONDON
HACKFORD RD SCHOOLS
LAMBETH T·J·BAILEY ARCHT



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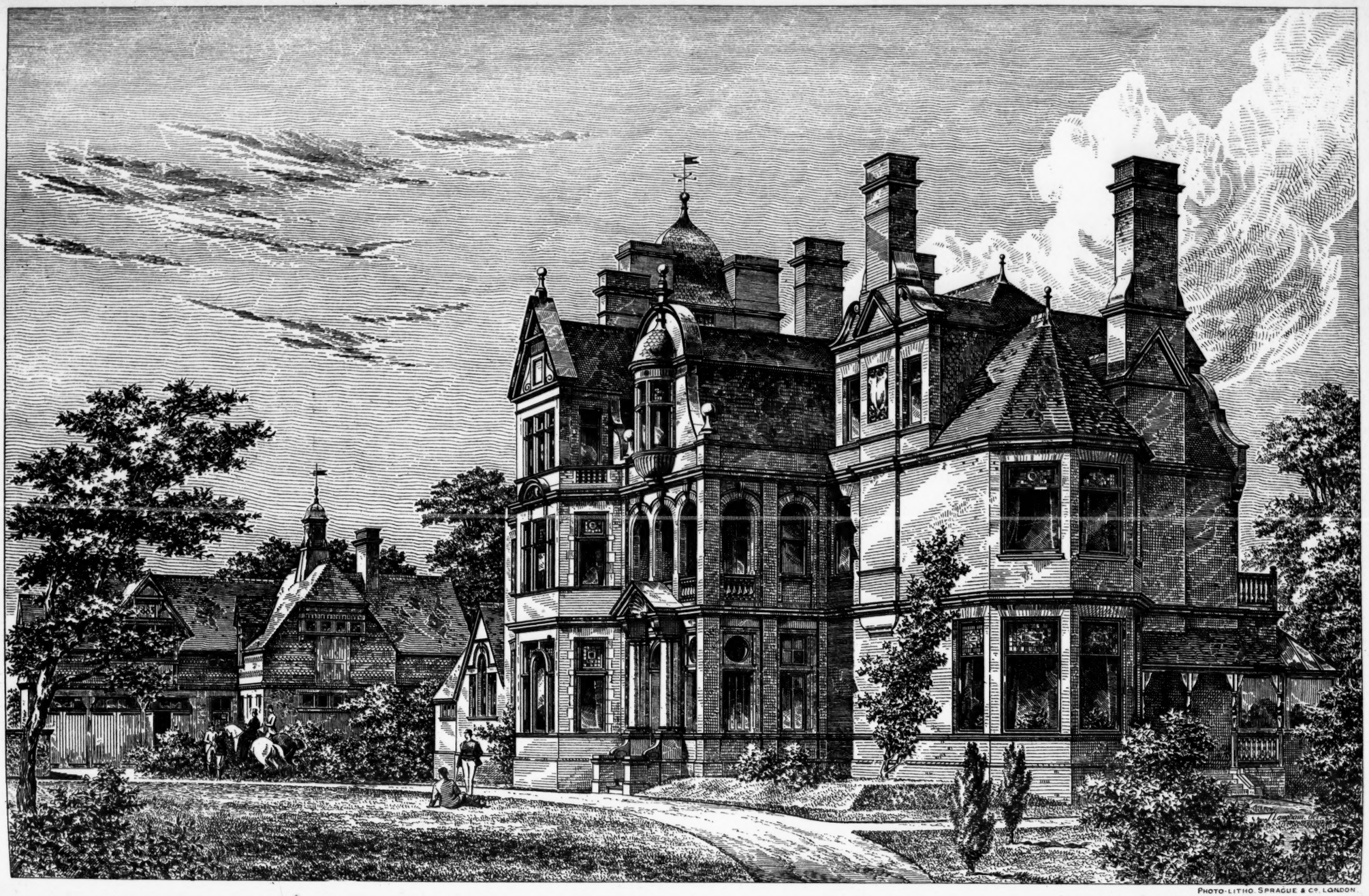
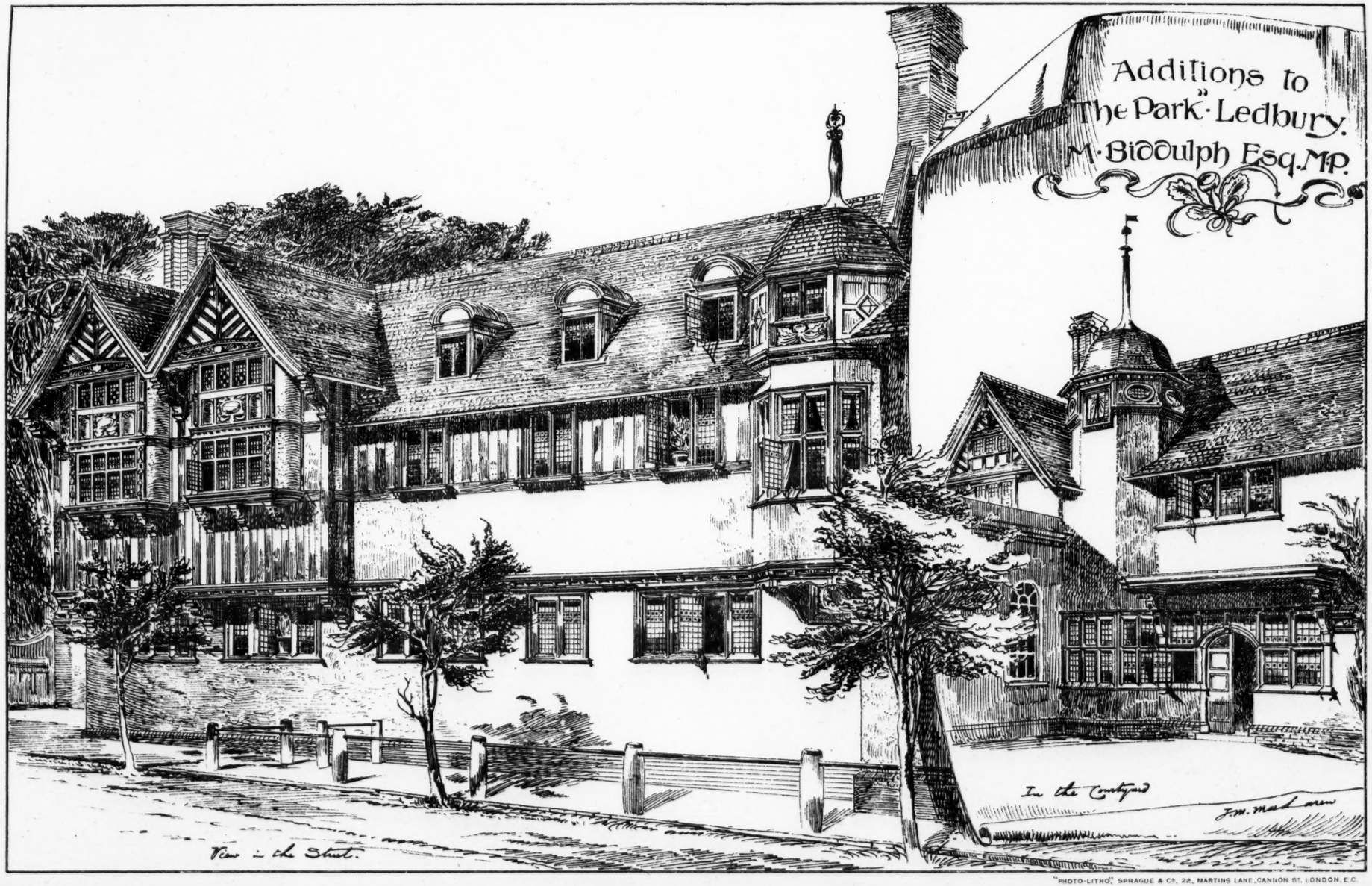


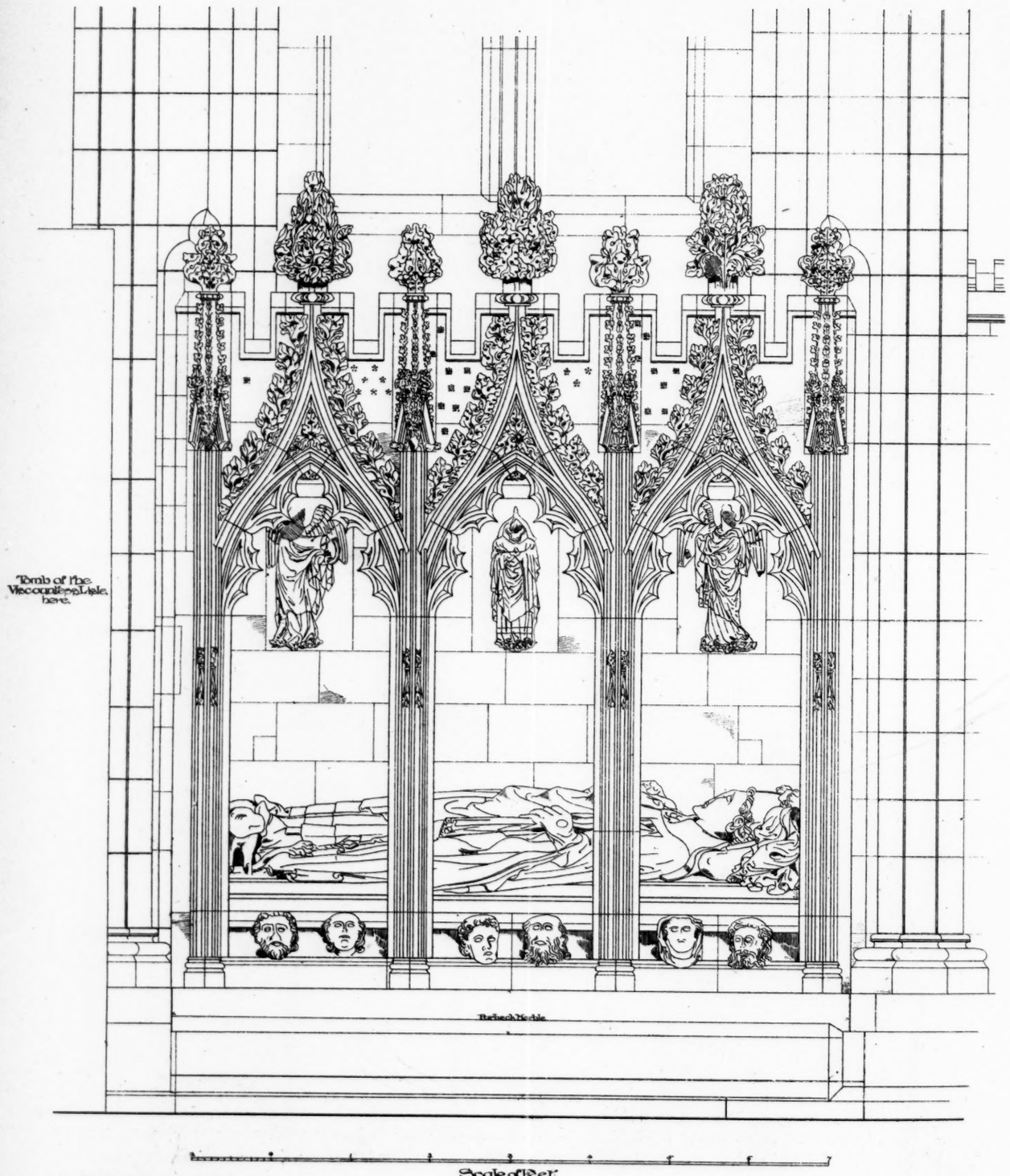
PHOTO-LITHO. SPRAGUE & Co. LONDON.

HATTON HOUSE, WESTGATE-ON-SEA.—Mr. J. T. Wimperis, F.R.I.B.A., Architect.



"PHOTO-LITHO" SPRAGUE & Co, 22, MARTINS LANE, CANNON ST, LONDON, E.C.

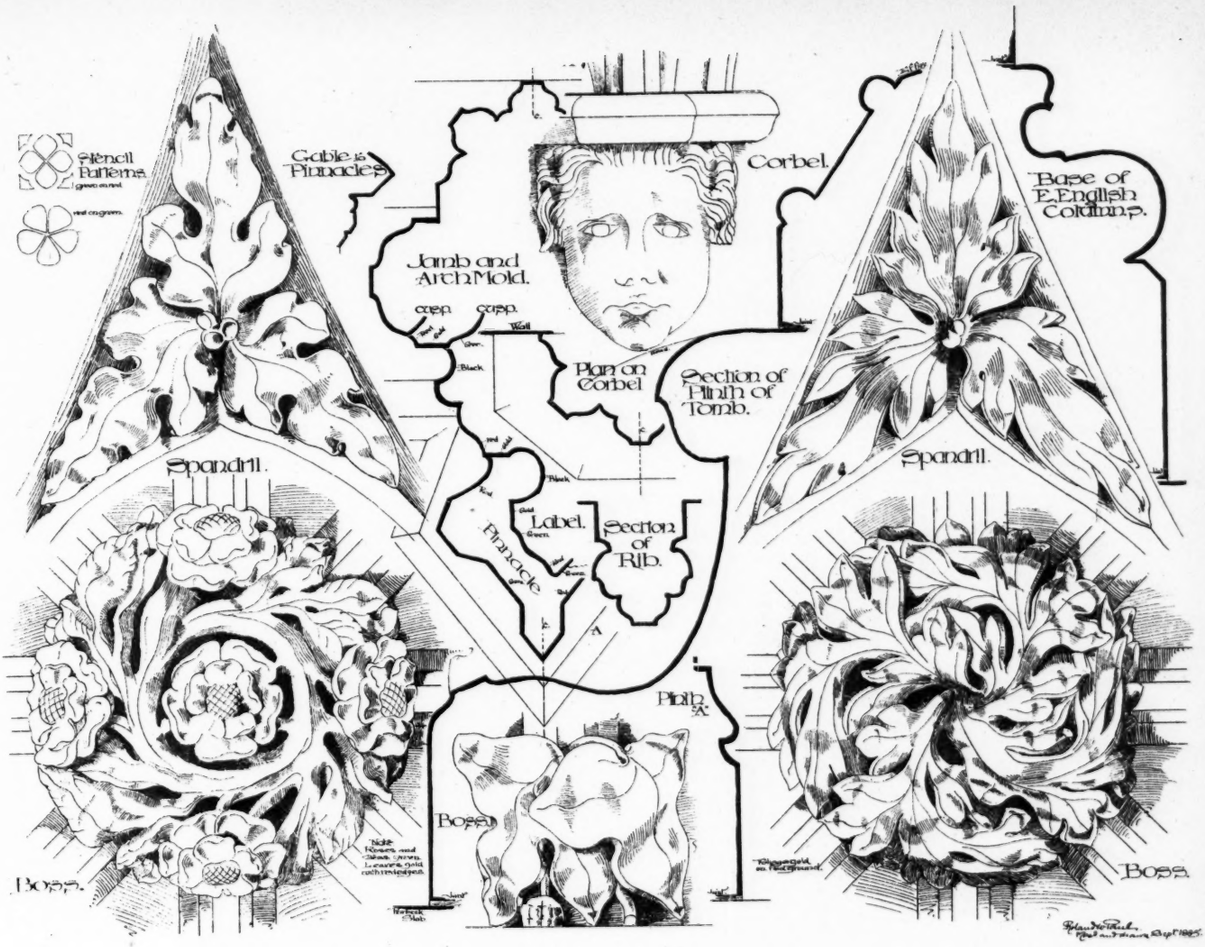
THE PARK, LEDBURY.—Messrs. R. Coad and J. M. Maclaren, Architects.


Tomb of the Viscount de Lisle, here.
Richard Pardie
Scale of feet.
Note:-
The tomb is situated in the centre of the north wall of St Thomas's portal is composed of Purbeck stone. Considerable remains of color still exist. All the fillage was gilded and enamelled, the diapered spaces are alternately red and green. The figures on the back are treated framed and green alike. For further notes on coloring see details.
William de la Marchia died in 1302.
All joints measured

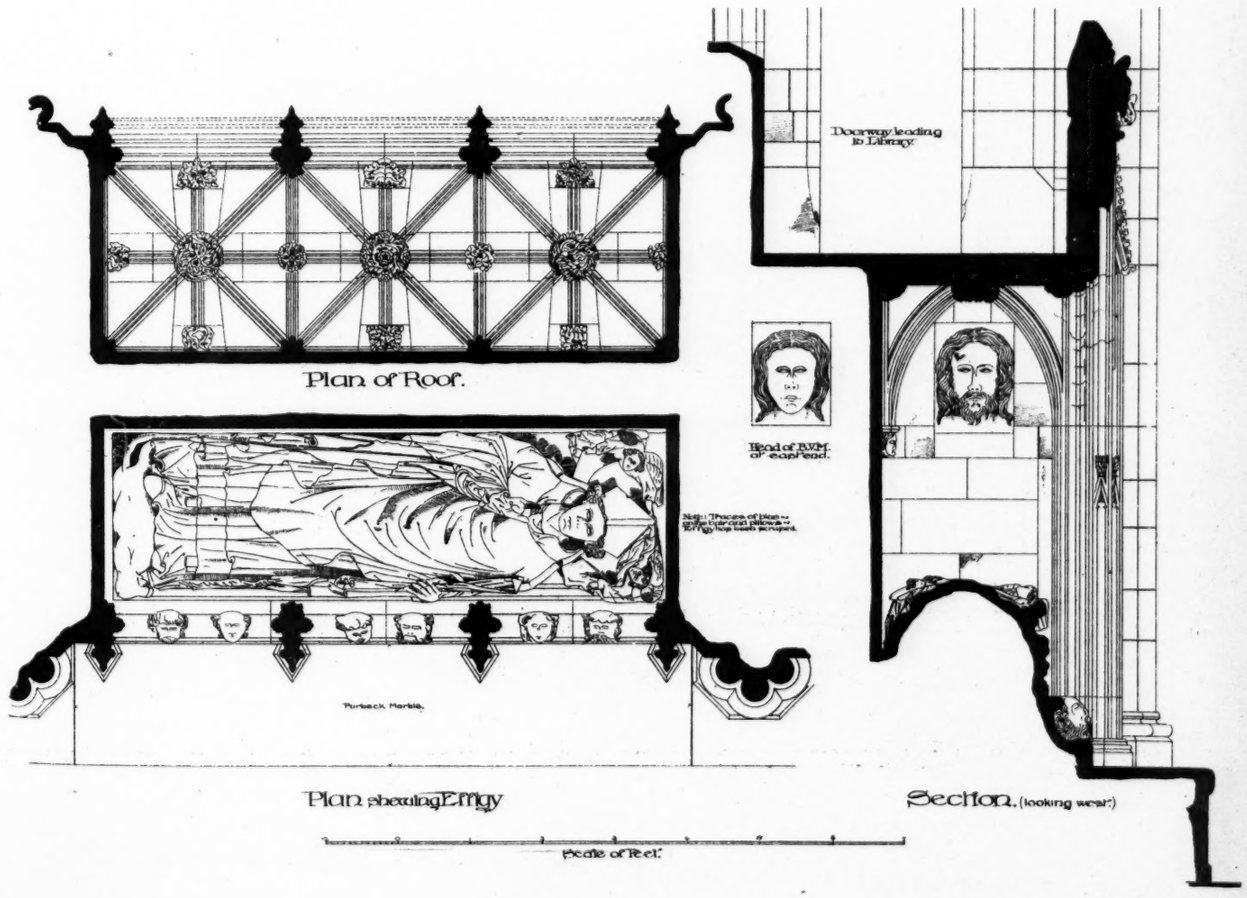
TOMB OF BISHOP WILLIAM DE LA MARCHIA, WELLS CATHEDRAL, DRAWN BY MR. R. W. PAUL.

AWARDED A.A. TRAVELLING STUDENTSHIP, 1886

C.F.Kell Photo-Lith & Printer 8, Furnival St Holborn, London, E.C.



Details.



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AWARDED A.A. TRAVELLING STUDENTSHIP, 1886

C.F. Kell, Photo-Lith. & Printer, 6, Furnival St. Holborn, London, E.C.

the time of this bishop, who, had it not been for his misappropriation of Church funds to pay the soldiers of Edward I., would in all probability have been canonised. He was treasurer of England, 1290–1295. Many miracles are said to have been done at his shrine.

Amongst the many interesting details is the central boss in the vaulting, the roses being coloured green, and the leaves gilded with red edges. Most of the other carving was gilded on a red ground. The figure-work is an especial feature, the effigy itself being one of the finest in the cathedral, while the angels at the back, and those at the pillow, are very delicately executed. The grotesque heads placed along the plinth of the tomb are quite unique in their treatment. The female head in the western-most bay is a good example of the head-dress of the period. Westward of the tomb, a row of heads, painted in fresco, and evidently part of the same idea, are placed in the hollow of the embattled cornice which finishes the curtain wall of the steps leading to the ambulatory at the back. R. W. PAUL.

SOCIETY FOR THE PROTECTION OF ANCIENT BUILDINGS.

THE ninth annual meeting of this Society was held in the Hall of the Society of Arts on Tuesday afternoon, the Hon. Richard C. Grosvenor in the chair. There were about fifty persons present, including a number of ladies.

The annual report, which was taken as read, stated that the Society continued its work steadily, the efforts which it made not being affected either by success or failure. During the past year, the Committee's efforts had been rewarded by success in two important instances, viz., the York churches and the Charterhouse, —clear proof that public opinion was changing, and that the world was beginning to value ancient buildings more highly. Much damage, however, was still being done yearly by the "restorer," and valuable buildings were destroyed, both in this country and abroad, owing to the great and unfortunate movement which was started years ago. Even when that movement was first set on foot, it was interesting to note that there were some who realised the harm which was being done, though they were themselves under the influence of the movement, and spoke of restoration as a thing not only possible, but commendable. In support of their views, the Committee quoted from the *Builder* of 1855, p. 489, an extract from a paper by Mr. Truefitt, read at a meeting of the Worcester Architectural Society, who, in speaking of the line to be followed in restoring an old building, said:—

"Never pull down any work and rebuild it in another style, but always prop up and patch an old building in all its varieties of form; never pull down elegant spirelets at the angles of our cathedrals because they are not of the date of the original building, but restore them; never remove such quaint original buttresses as those flying ones at the east end of a certain structure not a hundred miles from the Faithful City, merely because they were not there when the building was first erected; for if such mutilations were fully carried out, nearly all our churches would be eventually pulled down with the exception of the original portions, namely, Norman doorways and broken fonts. Our buildings should be restored just as we found them; if there were a Norman nave and a Decorated chancel, restore each, but do not try to make them alike: *a building should be mended just as we patch an antique chair, or rivet an old china bowl.*"

The report gave other extracts, including one from the *Gentleman's Magazine* for 1826 (vol. 96, part 2, p. 109), protesting against the work which was then being done to the Hall of Gray's Inn, a building of the time of Queen Mary, such work consisting in covering the dark red brickwork with compo. The "restorers" of Gray's Inn Hall, no doubt, believed that they were improving the building and making it more Gothic; but so believed the "restorers" of ancient buildings at the present time. The only difference was that now the imitation of the Mediæval work was so much closer that it required a man with a better knowledge of the genuine Mediæval work to detect the imitations of the well-practised "restorer." And no doubt in another sixty years' time men will be scoffing at the works of to-day as the world scoffed at the restoration work of sixty years ago. But the "restorer" of to-day was the more to blame because he had had time enough to see what a hopeless task he had undertaken, and time to learn that the greater his power of close imitation the greater was the damage done to the history of art. The efforts of the Society were, however, surely telling, and during the last two or three years architects of note had taken to putting the date upon their mitative work, while others were making sincere efforts to render their work as little imitative as possible. The report, after enumerating several of the home cases with which the Committee had dealt during the past year, referred with satisfaction to the labours of the Société des Amis des Monuments Parisiens; and, in conclusion, suggested the formation of a society for the preservation of ancient buildings in India,—a society in which Englishmen and natives of all races and denominations might combine for the protection and preservation of monuments in which all, but especially the natives of the country were so deeply interested.

The Chairman, in moving the adoption of the report, said that since the establishment of the Society nine years ago its necessity had become manifest more and more, and it had done good work, but he should like to see it go a step further in the future. He suggested that it might be possible to raise a fund from which the Society could directly contribute money towards the needful repairs of churches with the view of keeping those buildings out of the hands of the "restorer."

Mr. William Morris, in seconding the motion, said that the Society had scored one great success in the matter of the Charterhouse, although Mr. Beresford-Hope, who posed as a great defender of ancient institutions, was in favour of the scheme of destruction which was proposed,—a scheme which, indeed, deserved to be classed as an audacious attempt at robbery from the public. With regard to the chairman's suggestion of a special fund, no doubt it would be useful, but unfortunately the Society had had some difficulty in obtaining the necessary funds for carrying on their ordinary work. If the Government would put a thumping tax, say 75 per cent., on the cost of all restorations, and hand the proceeds to the Society to be spent in the preservation of threatened or neglected buildings, it would be a most beneficent piece of legislation for the country.* If only a hundredth part of the sum which had been spent on "restorations" had been spent on the preservation of the buildings operated upon, there would have been no need for the existence of the Society.

The motion having been carried,

Mr. J. T. Micklethwaite, F.S.A., read a paper entitled "A Churchman's Plea on behalf of the Old Churches." He urged that although the Society had now obtained a hearing, it had still a great work to do. It had to make the guardians of old buildings understand their true value, and how easily they could be harmed. That was a hard task, but not a hopeless one, for encouragement might be drawn from the history of the very evil against which they were fighting, which was expressed in the one word "restoration." Fifty years ago churches, especially in towns, were sometimes subjected to very barbarous "improvements," but most of them suffered only from neglect. That neglect was only one manifestation of a general deadness in all church matters. At length a body of men arose who set themselves earnestly to work to bring about an awakening and reform. They were the first who in any way felt the real value of the old churches and seriously set to work to study them. If the men who formed the Cambridge Camden and such like societies had not been, the destruction of churches would have taken another form than that of "restoration," but we should not have learned the value of the remnant that remained. There could then have been no "Society for the Protection of Ancient Buildings," though it was to be doubted whether the need of it would have been less. The fundamental error of the old teachers was in holding that it was possible and proper to bring back an old church to its original condition. However old a church might be, each generation in using it had altered and improved it according to its wants and its ideas of what was right. It might be that every part of it had been built and rebuilt several times over, and that the building we now saw was five times the size of that from which it could be shown to have grown; but the changes had been made in such a fashion that the identity had never been lost, and the church was still the old church to us, as it had been to each one of the, it might be, more than thirty generations who had preceded us. Some of the adherents of the society had said, in their indignation at the brutality of the restorers, that we ought not to touch an old building at all, save to protect it from further injury than it had already received, but should keep it with all its history exactly as it had come down to us. It was, perhaps, well for the first advocates of preservation to call attention to their teaching by stating it in its barest and most extreme form, but a hearing having been obtained, it was, he thought, wisest to present the doctrine now in a form which would not provoke men to reject it as impracticable. "Restoration," as the word was now commonly used, included a right and proper treatment of a church as well as an improper one. The great revival of church life in our time had created wants which did not exist fifty years ago, and changes made to meet those wants honestly and without affectation were genuine additions to the history of the buildings. The harm had come of men trying to make believe that their nineteenth-century works were not done by themselves, but were part of some imagined original design. He contended that works done to meet the real wants of churchmen of the present day were, if good in themselves, very proper additions to an old church, but the architect of such works should take care that what he did should clearly show itself to be of its real date. Not that it should intrude itself as a thing out of harmony with its surroundings. The men of the fifteenth century could make their own additions to the churches of the thirteenth century without producing discord, and some of the men of the nineteenth century could do the same thing, or they were not fit to touch the work. Some might say that reverence required that a church should be kept decent and in proper order. That was specious, but if used to defend "restoration," it was really begging the question. Age was not indecent, and that which had upon it the dignity of centuries was far more fitting to an old church than the same thing patched, polished, and straightened up into newness. The Society wanted to make men distinguish between useful and needful repairs and useless and mischievous renovation. Repairs were right and proper when they were done for the structural good of the buildings; and so were alterations when done in the right way and to meet real modern wants. But renovation done for no other end than to gratify the vulgar taste for smartness was always wrong. If we would save the remnant of our churches from destruction, that was the lesson which we must teach to their guardians. It was not sought to stop them from improving their churches as their convenience or devotion required, but to show them a better way to do it. Let them write the history of their own time as freely and fearlessly as they would, but not in palimpsest.

On the motion of the Rev. Newton Mant, M.A., of Sledmere (who indulged in some extravagant remarks as to architects generally and diocesan surveyors in particular), seconded by the Rev. T. W. Norwood, F.G.S., of Nantwich, the thanks of the meeting were tendered to Mr. Micklethwaite for his paper; and a vote of thanks to the Chairman, moved by the Mr. John Hebb and seconded by Mr. Philip Webb, brought the proceedings to a close.

* Does Mr. Morris seriously imagine that the interests of the Society will be promoted by such nonsense as this?—ED.

ARTISTS' BENEVOLENT FUND.

ANNUAL DINNER.

THE seventy-seventh anniversary festival of the Artists' Benevolent Fund was held at the Freemasons' Tavern on the 4th inst., the Right Hon. Lord Coleridge, Lord Chief Justice of England, in the chair.

In proposing the health of "The Queen," the Chairman referred to her Majesty's sympathy with artists, as evinced by the fact that she had this year, as usual, sent her contribution of 100 guineas to the Artist's Benevolent Fund, making a total gift of nearly 5,000*l*.

The Chairman, in proposing the toast of the evening, "Prosperity to the Artists' Benevolent Fund," remarked that it had been said that the world knew nothing of its greatest men. The point of that expression was that some men were checked and hindered, some cut short, some diverted perhaps, now and then, by a high sense of duty, from a career which they would have done honour to, and compelled to trudge along the road of every-day life, to die at last, as Dr. Oliver Wendell Holmes had said, "with all their music in them." That was especially true

of the artist. Some were tempted into the path of art by a feeling which they mistook for genius; perhaps by the sympathy which they thought was power, or by a multitude of other considerations, and after a few years of struggle they found themselves face to face with starvation, or something very nearly approaching it. There were others of real genius who were too poor to rise, and who, after a struggle of more or less gallantry, fell into a base captivity, and spent their lives in enriching some vulgar tradesman, or else became the real foundation of some fraudulent reputation. It was true of art as of other callings, that not all artists were among the unworldly. Any one who was at all acquainted with art knew that that supreme and magnificent genius, Rubens, was possessed of a high-minded and shrewd and tradesmanlike mode of disposing of his pictures. Sir Joshua Reynolds left a considerable fortune behind him; and Turner made something like 150,000*l.* before Mr. Ruskin wrote a line about him. But it was to assist those who were not like Rubens or Sir Joshua Reynolds that that society existed, and the Chairman concluded by an appeal on its behalf, coupling with the toast the name of the President of the Fund, Mr. Beresford-Hope, M.P.

Mr. Beresford-Hope responded, and proposed "The Chairman," who again briefly addressed the Company.

Mr. George Godwin, F.R.S., in proposing "The Royal Academy," expressed regret that the members of the Academy were apparently for the most part so very little disposed to help this, the senior Artists' Benevolent Fund. The impression seemed to prevail in some quarters that it was a mere benefit society, but that was a complete mistake. The society consisted of two parts. First, there was the Artists' Annuity Fund, a sort of benefit or insurance society, most admirably managed, but which was entirely self-supporting, and neither asked for nor received help from the public; and secondly, there was the Artists' Benevolent Fund, a charitable society, to which, in fact, the members of the Annuity Fund contributed, and to whose funds they asked the public to contribute in aid of the widows and orphans of artists. Referring to the Academy, Mr. Godwin said that, notwithstanding much that had been said against it, it still remained the great centre towards which all artistic effort was directed, and it was, he was glad to say, doing more now for the furtherance of art than it had ever done. With the toast he coupled the name of Mr. C. B. Birch, A.R.A.

Mr. Birch briefly responded, and other toasts followed. During the evening subscriptions to the amount of 400*l.* were announced, including a donation (the forty-seventh annual) of 105*l.* from her Majesty the Queen.

The musical part of the entertainment was given by some members of the Savage Club.

[In reference to Mr. Godwin's remarks as to the want of knowledge of the objects of the Fund, we quote the following from the Address of the Committee:—

"The 'Artists' Fund' was established in the year 1810, and received in 1827, from his Majesty King George the Fourth, its patron, a Royal Charter of Incorporation. It now enjoys the most gracious patronage and support of her Majesty the Queen.

The Artists' Annuity Fund is raised and wholly supported by the contributions of its members for their own relief in sickness or old age; it [neither asks for nor receives any support from the public. All artists in Painting, Sculpture, Architecture, and Engraving are eligible to become members.

The Artists' Benevolent Fund is purely charitable, and has for its object exclusively the relief of the widows and orphans of members of the Annuity Fund left in need; it is supported by the donations and subscriptions of the patrons of the fine arts and artists, and annual subscriptions of the members of the Annuity Fund. The annual sums payable to the most needy of the widows and to the orphans are respectively supplemented by donations and from the interest on benefactions of Miss E. L. Pye and the late Edward Absolom, Esq. The claims of all widows and orphans who become entitled to its benefits are admitted at once, and without limit to number."

We may add that during the past year 55 widows and 18 orphans received annuities, amounting in the whole to 1,137*l.*]

Wandsworth Workhouse.—The Guardians of the Poor of the Wandsworth and Clapham Union at their last meeting instructed their architect, Mr. T. W. Aldwinckle, to prepare plans for alterations and additions to the old Workhouse, St. John's-hill, New Wandsworth, with a view to its occupation as an extension of the present infirmary.

ASSOCIATION OF MUNICIPAL AND SANITARY ENGINEERS AND SURVEYORS.

A DISTRICT meeting of this Association was held at Great Yarmouth on Saturday last, on which occasion the following papers were read and discussed.

Mr. J. W. Cockrill, Borough Surveyor, read a paper on "Great Yarmouth, and some of the recent Works of its Sanitary Authority." He said that the population of the town at the commencement of this century was 16,573; at the census of 1881 it was 46,159, and now is very near 50,000. The death-rate as given by the Registrar-General last year was 17·85. The acreage is about 3,400, of which 500 acres is Corporation waste, and available for building land. The roads and streets are upwards of 110 miles in length, exclusive of the "Rows," of which there are about eight miles. The "Rows" form a peculiar feature of the town, and accommodate a population of upwards of 13,000.

There are upwards of fifty miles of sewers in the borough. The river Yare, which divides the borough into two equal parts as far as area is concerned, forms the main sewer, and, in Mr. Cockrill's opinion, makes a most efficient one. A strong tidal current exists, with plenty of back-water, by which the sewage is swept out to sea, only returning to the beach at a point beyond the Corporation district. In 1881 and 1882 complaints were repeatedly made about the stench given off by the surface ventilators to the sewers, and in October, 1882, Mr. Cockrill was instructed to investigate and report upon the condition of the sewers in the town district, and the necessary work to put them into efficient working order. To carry out these instructions he opened 144 sewers, upwards of twenty-three miles in length, at points not more than 100 yards apart. The defects discovered in the sewers were, in a large number of cases, entirely attributable to the utter disregard with which private and even Corporation connexions had been made with them. A large number of brick sewers existed within the area bounded by the town wall; these were several centuries old, the bricks were thoroughly rotten and rat-eaten, and many of them so repaired, altered, and cut about, that there were not 10 yards in one length in which the sewer remained of its original section. In two cases the sewers had been cut off from the outlets through which they had originally drained, and were connected with another sewer at their upper ends, thus involving a deposit of 15 in. or 18 in. of sewage in about 100 yards in each case. It was not to be wondered at that about twelve months previously to the discovery being made, three deaths from diphtheria had taken place in one house draining into one of these sewers. Mr. Cockrill advised the Sanitary Authority to take up and relay all the pipe sewers in which any defects had been discovered, re-making private connexions with the same with proper junctions, and to take up all the old brick sewers and replace them with glazed pipe sewers. He also advised that full means of flushing on some automatic system should be adopted wherever possible, and that a movable flushing-tank be constructed of 3,000 gallons capacity; that the sewers should be thoroughly ventilated by pipes, with a sufficient number of surface gratings to provide fresh air; and that the sewers should be divided into lengths by light galvanised iron flaps to prevent the uprush of sewer air from the low levels into the upper reaches of the sewers. His estimate for this work was 8,000*l.* He also advised that connexions should be only made by Corporation men, and that only with proper junctions for both brick and pipe sewers, and he invented (although he afterwards found out that a similar block was in use at Leeds), a special junction block for pipe sewers. He had found that in making connexions, if he insisted on taking out a pipe and inserting a junction, that it was next to impossible to get the sewer laid correctly again, and he claimed for this block that a connexion with ordinary care could be made quite equal to that made with the junction-pipe in one piece. The report referred to was in the main adopted, and after more than two years' trial the work done gives thorough satisfaction; the estimates were not exceeded, and for the sum of 8,000*l.* about six miles of new pipe sewer were laid and seven miles of pipe sewers relaid, involving about one-third new materials; about 3,000 house and other connexions were re-made; 40 cast-iron ventilating pipes, 6 in. by 9 in. and 6 in. by 6 in. were erected against houses, three wrought-iron shafts to stand alone and two brick shafts (four brick shafts had been previously erected) and six flushing-tanks of 3,000 gallons capacity, with automatic syphons, were put at the heads of sewers where they would do most work. The cost of water to supply these flushing-tanks, and the large movable tank, led to discussion as to whether it would not be advisable for the Authority to provide their own supply for sewer flushing and street watering. Of course, opposition was raised to this; scientific evidence was obtained to prove that sea water would be both injurious to roads and health, but under Mr. Cockrill's advice the opinion of Mr. H. P. Boulnois, of Portsmouth, was obtained on this subject, and at the inquiry held before the Inspector of the Local Government Board, he completely (or at least to the satisfaction of the inspector) demonstrated that all the evil charges made against sea-water when used for such purposes were untrue, and that much good might be expected both on roads and in sewers by its use. Mr. Cockrill said he had had previous experience in road-watering with it, found that it was much more efficient in laying dust, and that roads in the summer time were less liable to break up than where fresh water was used, but he advised that one section of the town should be watered for a whole season; this was done, a large expense was saved in quantity of water used, and also gravel which it had been necessary on previous occasions to use for patching. The Council had, during the year previously to this matter being brought on, used about 10,000,000 gallons of the company's water to flush sewers and water the roads in the district which he proposed should be served with sea water; these 10,000,000 gallons had cost 552*l.* 0s. 6d., while the average cost of the water for seven years, in which little or no flushing had been done, came to 404*l.* 6s. 7d., and he estimated that to supply the flushing necessary to keep the sewers clean would involve an outlay of at least 700*l.* per annum, and for this they would receive about 14,000,000 gallons only. The scheme he prepared involved fixing an "Otto" gas engine of 8-horse power (making the third he has now fixed for this Council, the previous ones working admirably), with pump, the erection of a tower, and cast-iron tank to hold 22,000 gallons, six miles of distributing cast-iron pipes of 8 in., 7 in., 6 in., 5 in., 4 in., and 3 in. internal diameter, with forty valves for flushing, and forty hydrants for street watering; six flushing-tanks of 2,000 to 3,000 gallons capacity were also included (making twelve now at work), and, much to his surprise, his estimate only came out at 4,500*l.*, and Messrs. H. F. Snow & Co., of London, are now at work upon the scheme, which is within a month of completion, the contract price being 3,987*l.*, while works not included in this contract, may, perhaps, amount to about 200*l.*

These figures give a clear gain to the Corporation, as may be seen below:—

Interest and repayment of loan on 4,500*l.* per annum	£270
Working expenses, depreciation and small additions, per annum	140
Total annual cost	£410

For this sum the plant erected will raise in 120 days, of ten hours each, 30,000,000 gallons, of which about 5,000,000 gallons will go on to the streets, while the remaining 25,000,000 gallons will go into the sewers, and more can be raised at less than 1½d. per 1,000 gallons, as less water is used for street watering; a considerable saving will also be made in horse hire; this is estimated at about 80*l.* per annum.

In the borough there are nearly fifteen miles of footway laid with concrete, in a similar manner to that now being put down, and described below. Some of this has had heavy traffic for fifteen years, and now shows no sign of wear, and will, no doubt, under fair treatment, last at least half a century longer, and, in Mr. Cockrill's opinion, is the cheapest and most durable footway which can possibly be formed.

The works now in progress have been undertaken by Messrs. M. C. Duffy & Son, of London and Yarmouth, and include about 17,000 yards super. of footway, 2½ in. thick, at 1s. 9d. per yard super.; rather more than three miles of kerbing, at 1s. per yard run, and a large quantity of granite crossings.

Mr. Cockerill gave the following as a few of the rules which experience had taught him

should be observed. Concrete must not be laid in frosty weather, and he had none laid from the middle of October to the end of March. It is also better to avoid extreme heat, as the sun takes the moisture out of the upper face before the cement has time to set. What concrete work he had done in hot weather is always well watered. If this is not sufficient it should be kept covered with mats. It is also advisable that the ground should be well wetted before it is laid. The expansion in hot weather is counteracted by the insertion of wood splines, placed from 5 ft. to 6 ft. apart. These are of the full depth of the concrete, and if at any time a piece of pavement is found to be lifting with the heat, at night, as soon as the temperature begins to lower, if a spline is taken out in every 100 ft. of the footway it will resume its proper position.

An objection to concrete paving, as laid *en masse*, is the difficulty of laying drains and water and gas pipes through the same, without cutting it up. The water and gas companies at Yarmouth find it possible to get under paths 7 ft., 8 ft., and 9 ft. wide, without breaking them up.

The paving now being laid is 2½ in. thick, the lower 1¾ in. thick composed of four parts beach shingle, screened through a ½-in. sieve, to one part Portland cement. The top ¾-in. thickness is composed of two parts beach shingle, screened through a sieve of ¼-in. mesh, and one part Portland cement. The kerb is 6 in. by 9 in., and mixed in the same proportions as the paving. In practice he found that however carefully concrete is laid, or however good the proportions, it will not stand vehicular traffic, and that is the reason for the large number of granite crossings included in the present contract.

In selecting the materials forming the base of the concrete, he had found that no other class of materials wears as well as beach shingle.

The Sanitary Authority has had under discussion the desirability of erecting public slaughter-houses.

Mr. E. G. Mawbey, Borough Surveyor, King's Lynn, read a paper on "The Sewerage, Surface-drainage, Sewage-disposal, and House-drainage of the Market Harborough Great and Little Bowden Local Board District."

During the day the members visited and inspected the concrete pavements of Yarmouth, and the sea-water sewer-flushing and street-watering arrangements.

THE CHEMICAL TREATMENT OF SEWAGE.

ON Tuesday evening, at a meeting of the Society of Chemical Industry (London section), held at Burlington House, Dr. C. Meymott Tidy, F.C.S., &c., delivered a lecture on the above subject to a large audience of the members, Mr. Howard, the president of the London section, being in the chair.

Dr. Tidy said the subject was very vast, and it would be very interesting, to follow the history of the subject through all its numerous phases and changes. He had tried to follow it conscientiously through all the Blue Books, and he hoped not many people would follow his example. It seemed to him that Blue Book No. 2 was always doing its best to undo all that was done by Blue Book No. 1, the two vieing with each other to bewilder the reader with facts and figures. Royal Commission followed Royal Commission, the members of which seemed mostly to be badly chosen. They were entrusted with inquiries into the subject of the pollution of rivers and of the diseases resulting from their pollution, although no medical man was placed on the Commission. He did not think there was much hope of any brighter future. He thought the outlook seemed better a few months ago, but some very dark clouds had gathered later. It was, in fact, a problem of a very complex nature they were called upon to solve when asked to advise upon sewage schemes. The researches of Lawes and Way in this country, and of Wolf and Lehman abroad, had given them some valuable conclusions. Taking the population per 1,000, they would find the liquid and moist excreta amount to 2,640 lb., the dry excreta to 141 lb., while the amount per head of other dry matters would be 2¼ ounces, with a large volume of water. To get results of that kind was an important matter. An important branch of the subject was the nature of the refuse obtained from the washings of the streets. It was found after heavy showers that the solid matter discharged into the gutters from a roadway of granite amounted to 800 grains per gallon, of which 280 were in solution and 520 in suspension. With wood pavement it was 50 grains per gallon, 40 in solution and 10 in suspension. Of course, it was to be expected that the quantities would vary with the traffic and the class of roads; but, in order to get results of any value, it was necessary to get samples every half-hour throughout the twenty-four. Factory refuse it was impossible to calculate, because the circumstances varied from day to day and from hour to hour. Samples of sewage that might be sent for analysis could not be trusted. It was even necessary in taking samples of river-water to get a series of samples at various places right across the stream. The difference would be found to be great in the same stream, between samples taken at the edge, where sediment collects and putrifies, and in the middle, where the air has free access. The calculations made as to the value of sewage were generally ridiculous and illusory. They were told to take the value of the excreta at six or seven shillings per head of population, and on that basis calculations made years ago, when London had only 3,000,000 inhabitants, had given the sum of from 1,000,000*l.* to 4,000,000*l.* as the value of the sewage lost. Of course, theoretically they ought to follow the teachings of science, and apply the sewage to the land, but when it came to be tested practically, it was always found that the question of making a profit out of it had to be given up. There were two things they could not do. 1. They could not produce a sludge as valuable as Peruvian guano; and (2) they could not produce an effluent as pure as drinking-water. In the purest effluent there was always left a disagreeable odour. The only way in which the effluent could be properly purified was by running it over land. In concluding his paper Dr. Tidy strongly condemned the views of those who advocated the system of water-carriage for the disposal of the sewage, and called upon the members of the Society to remember that it was their duty to apply their science to the daily wants of daily life, and thus endeavour to meet the common needs of humanity.

A discussion followed in which Dr. Dupré, Mr. Bischoff, Mr. Cresswell, and other gentlemen took part.

Mr. Cresswell regretted that the lecturer had not given them the advantage of his own views respecting an alleged recent discovery, which, if true, would deserve to be recognised as one of the greatest discoveries of modern times. He referred to the employment of permanganate of soda proposed by the Metropolitan Board of Works.

Upon this point Dr. Tidy said he had not touched, not because his opinions were not formed, but for reasons already stated. He might say that the three eminent chemists who had sent in the report referred to by Mr. Cresswell had all given evidence that nothing further was required to be done in the treatment of sewage than had been done by the Board, and that the Board, which believed it had conferred a great benefit on the community in turning the sewage into the Thames, was quite consistent in making choice of those eminent chemists to support it.

The proceedings closed with a vote of thanks to Dr. Tidy.

TILBURY DOCKS ARBITRATION.

ON Monday last, Lord Coleridge and Lords Justices Lindley and Lopes delivered judgment in the matter of a question arising out of the arbitration between Messrs. Kirk & Randall, the contractors, and the East and West India Docks Company, concerning the contract for the construction of the large docks recently opened at Tilbury.

The question before the court was whether it was within the jurisdiction of the arbitrator to receive evidence upon and entertain certain of the claims preferred against the Company by the contractors, more especially those involving a consideration of the nature of the soil in which the excavations had to be made. The arbitrator himself,—Sir Frederick Bramwell,—had ruled that the claims before him were properly within his jurisdiction, but the Company appealed to the Court of Queen's Bench to direct him to the contrary. This the court declined to do, and the Court of Appeal has now unanimously supported them.

Judgment was therefore given in favour of the contractors, with costs.

ASSOCIATION OF PUBLIC SANITARY INSPECTORS.

ANNUAL DINNER.

THE third annual dinner of this Association was held in the Venetian Saloon of the Holborn Restaurant on Saturday evening last, Mr. Edwin Chadwick, C.B., President of the Association, in the chair.

The usual loyal and patriotic toasts having been given, Surgeon-General Sir Guyer Hunter, M.P., responding on behalf of "The Army and Navy,"

Dr. Alfred Carpenter proposed the toast of the evening, "Prosperity to the Association," and urged that sanitary inspectors should be granted something like "fixity of tenure" of their offices, and be paid out of the Consolidated Fund. They should not continue to be placed, as they were at present, at the mercy of members of sanitary authorities who were interested in dilapidated and insanitary property, but their tenure of office should be assimilated to that of Poor Law officers. The Association was a very useful and valuable one, not only to the members individually, but to the nation at large, for the members sought, by periodical meetings for the interchange of views, to protect the nation, and not merely their own localities, from epidemics and other results of insanitary conditions. (The toast, with which was coupled the name of Mr. Chadwick, was very heartily received.)

Mr. Chadwick, in responding to the toast, gave an interesting address on "Sanitation *versus* Militarianism." At the outset he referred to the deplorable cost in life and money of the delay of sanitary legislation incurred by political pre-occupations. Whilst we were under further delay of legislation, it might be advisable that we should consider our normal standards of sanitation, for the future application of their principles. We must strengthen our principles by considering and revising our results. These were all sound. Take, for example, our prisons, once the chief seats of pestilences, now by sanitation, with the means of water carriage, and cleanliness in every cell, the seats of the highest health. So with our district half-time pauper schools, in which the "children's diseases" were almost banished, where typhus, by which they were once so dreadfully ravaged, was now unknown, and in one of which (Anerley), with some 900 children, there had not been a case of measles for the last twelve years. In those institutions, those who entered without developed diseases upon them showed a death rate, although they were children of the lowest type, less than one third of the death rate amongst the children of the general population, to whom the principles might be eventually applied. In extension of facts bearing on these results, urban districts should be examined and studied as normals where the separate system of drainage had been duly applied, where by correct sanitation foul smells were cleared from the houses and from the streets, and from the fields, where fresh and undecomposed sewage was duly applied with a five-fold production, and where the death rates had been reduced by one-third, and in some instances by one-half, what they previously were. Such normal examples should be kept in view and studied, though for the present they were shut out by the prevalence of sinister interests in regard to expense, or by pre-occupation with inferior political questions. These results might well be studied in contrast with those in which by the contraventions of sanitary principle the population of the Metropolis had been depressed, as declared by Lord Bramwell, through works that were now declared to be a disgrace to the Metropolis and civilisation, and were demonstrated as such in the condition of the seat of legislation itself, on which there was much to be said in exemplification of legislative disunity. To the normal results we might add the normals of the preventive service, which showed how sanitation had half emptied military hospitals which curative science, unaided by sanitary science, kept full, with augmentation of force and economy by the reduction of the army death-rates by two-thirds of what they formerly were. Our immediate means of economy by sanitation were now, however, straitened by the general distress which restricts immediate outlays of which the economical results were as yet little known in Parliament. Let us look at Italy. Two millions of money were voted for the relief of Naples, by sanitation, from the dire visitation of the cholera. But there was a deficit in the treasury, and the Government had not the money to give. The deficit was due to the enormous expenses of militarianism,—to bloated armaments, and to a fleet of big war-ships, some of which ships must have cost, as ours had done, a million of money each. It might be of use to give an estimate of the civil life and force that might be gained to a country by the application of a million of money,—the cost of one big ship,—if the sum were spent on sanitation. His only son had, he was happy to state, from a Royal Engineer become a special sanitary engineer, and had been doing sanitary work in several colonies for the Colonial Office. His recent work had been at Malta, and he presented it for this occasion as an example. The complete works of constant water supply, of the water carriage from the houses, and of the application of foul water to agricultural production by irrigation, will cost about 80,000*l.* for

the whole of the population, about 100,000. He could confidently aver that the result of that expenditure, with well-qualified sanitary inspection, would effect a reduction of the death-rate by ten in a thousand,—as the like works under the separate system had done at home, would make Malta a real health-resort, and would also make it a great garden, with a fivefold production in an inferior climate. The expenditure on one big ship,—the million of money,—would serve for the sanitation of a territory and population of some twelve or thirteen Maltas, would save yearly a hundred lives, and more than two thousand cases of sickness, and all the expenses of lost labour to the adult population. Germany had paid the foremost attention to the application of sanitary principles to her army, and since the Franco-German war had gained by it as much life and force as was then lost by the sword. It was to be hoped that the like attention might be given by her to her heavily death-rated civil population. For ourselves, sanitation had gained for the Indian, as well as the home army, a great extent of the relief we proposed for it. In the Indian army we had obtained a reduction from the old death-rate of sixty-nine to thirteen per thousand. During the last decade, when the reduction had been got down to twenty in a thousand, a gain of forty thousand of force, first to last, had been achieved, and a gain of six millions of money. We had yet to advance there and to hold more firmly our dominion by the sanitary improvement of the civil population. In our Colonies, where, in the ignorance of sanitation, settlements had been made on undrained and malarious sites, with undrained houses and towns, there had been a great excess of preventible disease. Sanitation defences against these, it might be shown, were of primary importance, and would give more strength of life and force than those military defences, so very gratuitously, as he conceived, imagined to be immediately necessary. In conclusion, he said, let us keep our attention on our established sanitary normals and our extending normals; with confidence it would give us a greater future than the world had ever imagined, much less seen. Towards that great future the labours of the sanitary inspectors, modest as they were, would contribute their certain and useful quota, if they went on and on, trusting ever in industry, truth, and increasing knowledge.

Other toasts followed, including "The Executive of the Association" (proposed by Lord Fortescue and coupled with the names of Mr. G. B. Jerram, Chairman of Council, and Mr. H. S. Legg, Hon. Secretary, who responded).

WEATHER STAINS ON WALLS.

SIR,—I should be glad if any of your readers can tell me what process is the best for taking weather stains from the face of a brick building covered by about 1 in. thickness of cement. Is there any process for dressing the face after cleaning by the application of any solution of silicate or similar substance which would not only have the effect of protecting the cement from absorption of the rain, but of rendering the face less liable to be disfigured in future by weather stains? What are the prices for cleaning and after-treatment respectively? A. F.

Duration of Kauri Forests.—Estimating, says Professor Kirk, in his "Report on the Native Forests and the Timber Trade of New Zealand," the total extent of available Kauri forest at 200,000 acres (an area greatly in excess of that stated by the best authority, Mr. S. P. Smith), and placing the average yield at the high rate of 15,000 superficial feet per acre for all classes, the present demand will exhaust the supply in twenty-six years, making no allowance for the natural increase of local requirements. If, however, the demand expands in the same ratio that it has shown during the last ten years, the consumption in 1895 will be upwards of 240,000,000 superficial feet per annum, and the Kauri will be practically worked out within fifteen years from the present date. Under these circumstances the best interests of Auckland and the colony at large demand the strict conservation of all available Kauri forest. The progress and welfare of the northern district have been largely due to her magnificent forest resources, and their conservation will prove an important factor in the permanence of her prosperity. The utilisation of ordinary timbers should be encouraged, and it should be an axiom with the settlers not to use Kauri when red and white pine can be made to answer the purpose. Any steps tending to postpone the period of exhaustion will be of the greatest benefit to Auckland, as a longer period would be allowed for the growth of timber to take the place of Kauri within the restricted limits in which replacement is possible. Should this warning be unheeded, a large displacement of labour will result, and the prosperity of the north greatly retarded.

The Student's Column.

OUR BUILDING STONES.—XIV.

ARTIFICIAL METHODS OF RENDERING STONE DURABLE.

BETWEEN the natural and the artificial stone there is a transitional series, viz., those natural stones treated artificially in order to strengthen and cause them to resist the action of weathering as much as possible.

The principal cause of the invention of these processes arose from the rapid decay of the stone of which the Houses of Parliament are built.

Now, there are many solutions which the chemist tells us may be used to saturate stone with, in order to assist in its preservation, but the majority of them are so costly,—either in the methods of application or the chemicals themselves,—that comparatively few have been tried, and, with one or two exceptions, they may be regarded from a commercial point of view as failures. It is not the slightest use to invent solutions which involve anything but the commonest and most easy methods of application, such as may be carried out with a brush or something of that sort. The principal drawback to materials only superficially introduced into the stone, however, is that a crust forms, and although they preserve it from attack for some little time, eventually this crust scales off or becomes ineffective. The solutions applied in many cases alter the colour of the stone.

Silicate of lime seems to have secured to itself a good name for preserving stone. It has long been acknowledged as one of the substances best adapted to resist both the influence of the atmosphere and the action of sea-water.

The affinity of silica for lime is so great that if a piece of clay, very gently calcined, or a little gelatinous silica be placed in a solution of lime water, the whole of the lime is quickly abstracted from the solution and enters into solid combination with the silica, forming an insoluble silicate of lime.

It was the knowledge of this fact that caused Mr. Ransome, of Ipswich, to invent a process which is one of the most admirable of scientific contrivances, and we are sorry that the invention has not been more successful in this country. In this process the surface of the stone has to be made thoroughly clean and dry and restored in places where necessary. The stone is then saturated as far as practicable with a solution of silicate of soda or potash, and afterwards applying a solution of chloride of calcium, which, coming in contact with the silicate, produces an insoluble silicate of lime, aggregating and cementing firmly together the several particles of which the stone is composed.

The silicate is diluted with soft water and made thin enough for the stone to absorb it freely. The less water used the better. The solution is applied with a brush, and it will at first be found to enter the stone very slowly. The brushing having been repeated several times it will eventually be found that a shining surface is produced. This shows that the stone has absorbed as much as it is then able; and the brushing should stop immediately the first indication of it is apparent. If, by accident, a little more of the solution than is actually necessary is applied, the excess must be removed.

After the silicate has become perfectly dry, the solution of chloride of calcium is brushed on lightly, but without making it froth.

It is stated that in some cases, in order to complete the preservation as much as possible, the stone should be washed after the first application with soft water and the operation repeated. "In the second dressing the prepared chloride of calcium may be tinted so as to produce a colour harmonising with the natural colour of the stone."

The trade circular also gives us the following cautions:—

"1. The stone must be clean and dry.

"2. The silicate should be applied till the stone is fully charged, but no excess must upon any account be allowed to remain upon the face.

"3. The calcium must not be applied until after the silicate is dry; a clear day or so should intervene when convenient.

"4. Special care must be taken not to allow either of the solutions to be splashed upon the windows or upon painted work, as they cannot afterwards be removed therefrom.

"5. Upon no account use any brush or jet for the calcium that has previously been used for the silicate, or *vice versâ*."

The success of the operation as a check to further disintegration depends in some measure upon the condition of the stone itself and the state of the atmosphere just before and at the time the process is applied.

In *Kuhlmann's process* a solution of silicate of potash or silicate of soda is applied to the surface of the stone. The surface is hardened by the decomposition of the silicate of potash.

If a limestone be operated upon, carbonate of potash, siliceo-carbonate of lime and silica will be deposited, besides which the carbonic acid in the air will combine with some of the potash, causing an efflorescence on the surface which will eventually disappear.*

It will be obvious, however, that the result of the process must depend on the purity of the limestone under treatment.

M. Kuhlmann has also introduced several chemicals to be applied to the stone which have the effect of producing certain colours in order that this process shall not disfigure it more than is absolutely necessary: these colours harmonising with that of the materials to which they are applied.

Szerelmey's Process.—This is also a solution which was patented for the preservation of stone.

It appears to consist in the application of two coats of specially prepared silicate, with a third coat of asphaltum.

The silicate solution, however, is said to be the only essential part of the process, the asphaltum being merely applied to protect the silicate from moisture.

No doubt a solution of silicate of lime, even in the hands of less experimental operators, will be found very efficacious in arresting further decay if the application be made in time; but there are cases when decomposition and disintegration of the stone have already made such progress that it would be both a waste of time and money to apply any of these processes to stay the evil.

Other means have been employed, by filling the pores of the stone with solution of baryta, followed by solutions of ferro-silicic acid or super-phosphate of lime.

Soluble oxalate of alumina has been used on limestones.

The principle of each of these processes is the same. It is stated that they differ from those just described, in that they cause an insoluble substance to enter into the structure of the stone without at the same time giving rise to the formation of any soluble salt, likely to cause efflorescence,—this latter being disadvantageous.

When appearance is not important, ordinary *paint* may be used, but, as every one knows, the atmosphere, even under favourable conditions in London (where these processes are more particularly required) destroys the paint in a few years.

Mr. Davis invented a process in which he used a solution of *linseed oil and sulphur*. The solution seems to penetrate the surface to the extent of a quarter of an inch, and to harden it to a remarkable extent. The percentage of sulphur held in solution by the oil itself is small, and the weight of the sulphurised oil used in proportion to the weight of the stone treated with, is likewise small, so that the percentage of sulphur, even close to the surface of the stone, is extremely minute.†

Paraffin has also been used to protect the surface of stone, and we are informed that it has been so employed on the other side of the Atlantic with considerable success. Amongst other things the Cleopatra's Needle, which adorns the Central Park, New York, and which has suffered severe disintegration, has been coated with paraffin. It has given a slightly darker colour to the stone, but is said to have been effective in stopping its decay.

Paraffin dissolved in naphtha, together with a number of other mixtures, have been made use of from time to time, but we are very doubtful whether any of these processes afford permanent protection to building stones.

It would be much better if the stone were properly selected in the first instance, and then these supplementary expenses would be considerably minimised.

* Gillmore, on "Limes, Cements, and Mortars."
† See Dobson's "Rudiments of Masonry," &c., p. 143.

We have previously pointed out that in the ordinary course of decay, many natural stones have a hard layer, formed by chemical action, on their exterior. This crust has a tendency to preserve the stone underneath; and although buildings certainly, for a time, look better for being washed down, yet we do not think this method advisable when they are constructed with this particular kind of stone for this crust is often removed in the cleaning, and the stone becomes more exposed, besides having to reform (if it can) another crust, resulting in a considerable loss of substance. This remark is only meant to apply to buildings which have been erected a considerable length of time.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

3,458, Joining Edges of Squares or Panes of Glass. J. Plenty.

The object is to unite or join together the edges of separate pieces or panes of glass by means of a cement composed of an insoluble silicate of lime, which unites with and forms part of the substance of the glass, gets harder and stronger with age, and is not acted upon or destroyed by the action of the weather. It is applicable to all kinds of glazing. The edges of the glass are covered with a thin layer of a paste composed of about three parts silicate of sodium, with one part dry powdered air-slaked quicklime, and one part carbonate of lime. Chemical action takes place, the soda combines with the glass, forming a hard insoluble silicate of lime, and uniting the separate pieces in one. The joint is not seen a few paces off, and it is claimed that this will allow of large lighting spaces with no apparent break. The system can also be applied to roof-glazing or to stained glass.

8,533, Door Knobs. R. R. Harrison.

This is a combination of a method of fastening the knob to its spindle, and also to an attached rose (fast rose) for fastening the knob to the door. A square spindle has holes or depressions for a neck screw, by which the knob is fastened to the spindle. The attached rose is connected to the door by screws as usual, but the neck of the knob has a screw turned upon it, so that in addition to the small screw of the spindle the knob is kept in place by a loose ring on the neck, which, when screwed into place firmly, fastens the knob.

15,512, Screw-drivers, Gimlets, &c. T. Dussieux.

This invention relates to improvements in these tools, each being made in one piece with its handle. The essential feature is simplicity and cheapness of production. The blades and handles are made by cutting lengths from wire of steel or other suitable metal, bending part thereof to the required shape to form the handle, and leaving a length below for the blade, the bottom of which is hammered, ground, or shaped as required.

NEW APPLICATIONS FOR LETTERS PATENT.

May 28.—7,163, T. March, Horticultural and other buildings and structures.—7,184, F. Hochuli, Saw Sets.

May 31.—7,214, F. Gibbons, Manufacture of Keramic Tesseræ, Mosaic Tiles, &c.—7,222, W. White, Heating and Ventilating Apartments.—7,232, E. Hatton, Hopper Ventilators.—7,242, N. Haigh, Automatic Feeding Motion for Wood Tenoning Machines.—7,282, J. Jefferies, Pneumatic Door Checks.—7,292, W. Brenton, Sash Fastener.

June 1.—7,307, W. Verity and J. Walker, Construction of Floors.—7,310, H. Smith and E. Bradley, Veneer and Lumber Cutters.—7,322. J. Bradley, Gas Lighting.—7,326, E. Breething, Roofing Tiles.—7,338, E. Picard, Manufacture of Glass.—7,361, H. Lake, Manufacture of Cement.

June 2.—7,380, T. & H. Holcroft, Water Meters.—7,396, H. Heath, Ventilators.—7,397, J. & B. Craven, Machinery for Moulding Bricks, Tiles, &c.—7,418, H. Hart, Water Cisterns.

June 3.—7,438, E. & E. Kerry, Building Bricks.—7,455, J. Kaye, Automatic Latching and Bolting Doors.—7,468, C. Baldock, Door Latch.—7,472, T. Smith, Ventilating, &c.—7,476, J. Ramboux and N. Neaghe, Polishing Marble, &c.—7,477, J. Dahse and E. Heinrich, Construction of Nails.—7,482, E. Brewer, Burglar Alarm Bell Apparatus.

PROVISIONAL SPECIFICATIONS ACCEPTED.

4,962, T. Porter, Draught and Dust Excluder for Doors, &c.—5,504, G. Newman, Sash or Window Fastener.—5,054, A. Stribling, Carpenters' Square.—5,556, J. Smith, Stoves, Firegrates, &c.—5,689, N. Locke, Self-Locking Bolts for Doors.—5,803, G. Hardy, Firegrates.—5,812, J. Hill, Securing Knobs to Spindles for Door Locks and Latches.—5,965, J. Kaye, Securing Knobs or Handles to Spindles.—6,698, L. White, Manufacture of Cements and Plasters.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

9,435, T. Jenkins and R. Perress, Ventilators.—9,703, W. Youlton, Sliding Window-sashes.—9,780, W. Thompson, Artificial Stone.—10,082, J. Storer, Roofing Materials, &c.—2,275, A. Clark, Locks.—2,833, A. Boult, Compensation Spring Balances for Window-sashes, &c.—9,621, J. Macmeikan, Chimney Tops and Ventilators.—9,942, G. Beadon, Doors and Door Fastenings.—12,535, J. Smith and A. Proudlock, Monumental Tablets, &c.—5,345, G. Johnson, jun., Machines for Making Tongue-and-Groove Flooring.—5,994, G. Mancion, Process for Preserving Timber.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

MAY 28.

By WYATT & SON.

Horndean, Hants—Freehold residence and grounds £680
Two enclosures of freehold land, 7a. 2r. 26p. 510

MAY 31.

By HORNE, SON, & EVERSFIELD.

Westminster—31, Parliament-street, freehold 7,150
9, Horseferry-road, 21 years, ground-rent 110*l.* ... 390
Colchester, near — Freehold, Marsh Farm, 72a. 3r. 7p. 1,520
Fulham—67 to 73 odd, Chesilton-road; and 2 to 20 even, Rostrevor-road, 97 years, ground-rent 112*l.*; 12, Cranmore-terrace, 93 years, ground-rent 9*l.*; 9 to 19 odd, Barton-road, 96 years, ground-rent 60*l.*; 31, 39, 43, and 45, Rigault-road, 91 years, ground-rent 23*l.*; and 34 to 54 even, Avonmore-road, 94 years, ground-rent 132*l.* 16,000
Thornton Heath—The freehold houses, Claytonville, Brookside, and Camperdown..... 2,130
Quadrant-road—Ground-rent of 6*l.*, reversion in 87 years 130

By WEATHERALL & GREEN.

Regent's Park—Ground-rents of 21*l.*, reversion in 53 years..... 575
Brixton-road—Ground-rents of 24*l.*, term 23 years 300
South Kensington—143, Cromwell-road, 85 years, ground-rent 28*l.* 10s. 2,500

By GRAVES & SON.

Maida Hill—4, Bristol-gardens, 64 years, ground-rent 7*l.* 1,400
Edmonton—109 to 119 odd, Upper Fore-street, freehold 1,310

By SALTER, REX, & CO.

Kentish-town—25, Churchill-road, freehold 500

By J. AMAND.

Stepney—103, 105, and 107, White Horse-lane, 13 years, ground-rent 15*l.* 270
Lambeth—35, 36, and 37, Duke-street, and 56 and 57, Tower-street, 26 years, ground-rent 20*l.* 400
Spitalfields—48 to 54 even, White Lion-street; 86, Wheeler-street; and 1, 2, and 3, Chapel-street, 27 years, ground-rent 85*l.* 750
Bethnal-green—24, 36, and 38, Warley-street, 39 years, ground-rent 6*l.* 610

By T. G. WHARTON & SHERRIN.

Ball's-pond—15 to 18, Mildmay-street, freehold..... 1,230
South Hornsey—35, Howard-street; 1, Shakespeare-road, 64 years, ground-rent 10*l.* 10s.; and a plot of freehold land..... 580
Barnsbury—46 and 48, Thornhill-road; and 53 to 59 odd, John-street, 22 years, ground-rent 45*l.* 10s. 965
Holloway, Charles-street — Prospect House, 48 years, ground-rent 6*l.* 545
50 to 59, Windsor-road, 66 years, ground-rent 47*l.* 5s. 2,730

By WIGHTWICK & GEORGE.

Forest-hill—12 and 16, Hurstbourne-road, 97 years, ground-rent 11*l.* 685
Sunderland-road — The residence Carapina, 94 years, gronnd-rent 11*l.* 995

JUNE 1.

By DRIVER & CO.

Plumstead—Bors'all Farm, and 32a. 0r. 35p., freehold 5,000
An enclosure of market garden land, 9a. 3r. 8p., freehold 1,050
An enclosure of accommodation land, 5a. 1r. 38p., freehold 775
Two enclosures of accommodation land, 19a. 3r. 8p., freehold 1,200

By JAS. POUSTY.

Rotherhithe—109, Clarence-road, freehold 365
Highgate—7, Holly-terrace, 19 years, ground-rent 2*l.* 12
Finsbury Park—72, Blackstock-road, 85 years, ground-rent 3*l.* 10s. 335

By W. HOLCOMBE.

Shepherd's-bush—9 and 10, Coulter-road, 94 years, ground-rent 10*l.* 10s. 4 0

By RUSHWORTH & STEVENS.

St. John's Wood—76, Carlton-hill, 56 years, ground-rent 15*l.* 1,200

By FAREBROTHER, ELLIS, CLARK, & CO.

Whitechapel—2 to 4, 7 and 8, East Mount-street, freehold 2,480
5 to 13 odd, Raven-row, freehold..... 2,890

By P. D. TUCKETT.

Wallingford—The Rush Court Estate, 398a. 1r. 38p., freehold 16,000
The Swan Hotel, and 8a. 1r. 18p., freehold 2,750
Cricklewood—The freehold residence, Belle Vue ... 2,100
The freehold residence, Norfolk Villa 1,495
The freehold residence, Westhaven 1,300

JUNE 2.

By BRIANT & SON.

Clapham—27, Chelsham-road, 76 years, ground-rent 8*l.* 530

By HEAPS, SON, & REEVE.

Euston-road—64, 65, and 66, Judd-street, 20 years, ground-rent 78*l.* 15s. 880

By H. J. BLISS & SON.

Bethnal-green—493 and 495, Cambridge-road, freehold 1,010
Leyton, Lea Bridge-road—Meadow Cottage, freehold 1,400
Mile-end—41, 43, and 45, Dunk-street, freehold ... 1,645
Bethnal-green—14 and 16, Bonner-road, 58 years, ground-rent 8*l.* 635
20, Bonner-road, 58 years, ground-rent 4*l.* 325
Ground-rents of 24*l.*, term 58 years 430
38 and 40, Bonner-road, and a Ground-rent of 40*l.*, 58 years, ground-rent 8*l.* 680
Mile-end—178, Hanbury-street, freehold..... £515
Bethnal-green—33 to 58 even, Russia-lane, 58 years, ground-rent 12*l.* 3,905
17 to 27 odd, Pollard-street, 21 years, ground-rent 8*l.* 870

By WALTER KNIGHT.

Chertsey, near—A plot of freehold land 230
Addlestone—An enclosure of land, 5a. 0r. 12p., freehold 365

JUNE 3.

By S. B. CLARK & CO.

Leicester-square—Nos. 14 and 15, freehold 12,000

By C. J. WHITELEY.

Brixton—35, Stockwell Park-crescent, 43 years, ground-rent 6*l.* 310

By CRONINS.

Seven Sisters-road—An Improved Rent of 234*l.* 1s., term 65 years..... 3,940
Peckham—31, Commercial-road, 81 years, ground-rent 6*l.* 10s. 325
185, Camden-grove North, 81 years, ground-rent 6*l.* 10s. 290

By NEWSON & HARDING.

Canonbury—25, Grange-road, 50 years, ground-rent 9*l.* 600
Camden-town — 53, St. Paul's-road, 64 years, ground-rent 7*l.* 450
Westbourne Park — 68, 70, and 76, Tavistock-crescent, 77 years, ground-rent 29*l.* 1,020

By C. C. & T. MOORE.

St. George's-in-East — An Improved Rental of 72*l.* 16s., term 5 years, with a reversion 500
Poplar—74 and 76, Bygrove-street, and 1 and 2, Hill's-place, 53 years, ground-rent 7*l.* 10s. 380
Ratcliffe—1 to 4, Little Queen Catharine-court, 9 years, ground-rent 6*l.* 11
Bethnal-green—7, Norton-street, freehold 250

By PRICKETT, VENABLES, & CO.

Hampstead Heath — The copyholds known as Gangmoor House, Ludlow Cottage, and The Lawn 4,350
Hampstead, Heath-street—The Coach and Horses public-house, copyhold 1,460
A copyhold house and shop 350

By HARDS & JENKINSON.

Brighton—17 and 19, Denmark-villas, freehold 1,990
Brockley, Gabriel-street—A plot of freehold land... 62

By MARSH, MILNER, & LANGTON.

Feltham—Two freehold cottages..... 330

By VENTOM, BULL, & COOPER.

Tottenham—A plot of freehold land 65
Norwood-green—An enclosure of land, 21a. 2r. 2p., freehold 2,050
An enclosure of land, 7a. 0r. 19p., freehold 585
Heston—A plot of land, 1a. 3r. 22p., freehold..... 330
Southall—The Old Gasworks, seven cottages, and 4a. 2r. 39p..... 800
North Hyde—An enclosure of market garden land, 10a. 3r. 21p. 1,030
Enclosures of land, 46a. 3r. 23p., in four lots 4,155
Honnslow—An enclosure of land, 8a. 2r. 26p., freehold 1,750
Heston—An enclosure of land, 5a. 1r. 11p. 355

JUNE 4.

By R. REID.

Merton—61, Merton-road, freehold 540
Griffith-road—A plot of freehold land 210

By BAKER & SONS.

Willesden-lane — The residence, Woodstock, 92 years, ground-rent 17*l.* 10s. 930
Blandford-square—27, Sherborne-street, 55 years, ground-rent 6*l.* 555

By W. B. HALLETT.

Holloway—51, Loraine-road, freehold 700
Green-lanes—81, Digby-road, 89 years, ground-rent 7*l.* 350

W. HALLETT & CO.

Maida-vale — 72, Sutherland-gardens, 77 years, ground-rent 12*l.* 755

By MURRELL & SCOBELL.

Clerkenwell—12, Red Lion-street, freehold..... 845

By NORTON, TRIST, WATNEY, & CO.

Sydenham-hill—Crescent Wood House, 52 years, ground-rent 60*l.* 4,030
Camden-town—157, 181, and 183, High-street, freehold 8,900
High-street — The Britannia public-house, 31 years, ground-rent 80*l.* 7,150
66, Park-street, 31 years, ground-rent 2 *l.* 980
Park-street—Rental of 196*l.* a year, term 51 years, 185, High-street, freehold, and a Ground-rent of 40*l.* 7,320
71, Park-street, 51 years, ground-rent 12*l.* 2,150
2, 3, and 8, High-street, a plot of freehold land ... 265
Haverstock-hill—Maitland Park House, 65 years, ground-rent 20*l.* 1,700

By ROBSON & PERRIN.

Stroud-green—66, Upper Tollington Park, 99 years, ground-rent 10*l.* 590

MEETINGS.

MONDAY, JUNE 14.

Society of Antiquaries of Scotland (Edinburgh). — 3 p.m.

TUESDAY, JUNE 15.

British Museum. — Mr. John A. P. MacBride on "Later Greek Sculptors." 2·30 p.m.

WEDNESDAY, JUNE 16.

Royal Meteorological Society.—Four papers to be read. 7 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting. 8 30 p.

SATURDAY, JUNE 19.

Architectural Association.—Vacation Visit (see advt.).

Richmond Hill.—We are glad to learn that the Duke of Buccleuch's property at Richmond Hill has been purchased by the local authorities, who, with a public spirit not always manifested on such occasions, have thus saved from destruction one of the most beautiful pieces of sylvan landscape near London. The purchase money is stated to be 30,000*l.*

Miscellanea.

Birmingham Architectural Association. At the ordinary meeting held at Queen's College on Tuesday evening, June 1st, the following gentlemen were elected to serve as the officers and committee of this Association for session 1886-87:—President, F. B. Osborn, F.R.I.B.A.; Vice-President, John Cotton; Ordinary Members of Committee, H. Beck, H. H. McConnal, A.R.I.B.A., Franklin Cross, A. V. Ingall, W. H. Kendrick, T. W. F. Newton, F. B. Peacock; Hon. Treasurer, A. Reading, A.R.I.B.A.; Hon. Librarian, A. Hale; Hon. Secretary, Victor Scruton.

Sanitary Institute of Great Britain.—At an examination held by this Institute on June 3rd and 4th, sixty candidates presented themselves,—ten as Local Surveyors and fifty as Inspectors of Nuisances. Questions were set to be answered in writing on the 3rd, and the candidates were examined *vivâ voce* on the 4th. As a result, the Institute's certificate of competency to discharge the duties of Local Surveyor has been awarded to Messrs. Edwin T. Beard, J. G. Morley, W. H. Parry, F. H. Tulloch, and T. W. Witts. The Institute's certificate of competency to discharge the duties of Inspector of Nuisances has been awarded to Messrs. C. G. Bateman, J. W. Brooke, T. B. Warren, W. F. Wheeler, J. H. Leverton, C. F. Newman, E. Clayton, W. J. Treadwell, M. Hampson, G. Bartlett, W. J. G. Wreford, G. Darley, T. Salter, A. E. Black, J. E. Smith, A. J. Munro, T. H. Freeman, J. E. Evans, J. W. Hildreth, G. Taylor, A. M. Thompson, W. Garland, W. W. Cooper, L. W. Mellows, S. Crane, T. Ashdown, F. P. Burscough, H. Brownings, J. B. Massey, J. Cooper, W. Jones, J. J. Sargent, R. Chamberlain, W. Green, A. Gunn, J. Radcliffe, T. Anderson, W. J. Press, J. Wilkinson, A. R. Bull, G. Phimster, C. Cox, J. Haworth, and H. C. Bascombe.

Society of Engineers.—At a meeting of the Society of Engineers, held on Monday evening, at the Town-hall, Westminster, Mr. Perry F. Nursey, President, in the chair, a paper was read on "Some Modern Improvements in the Manufacture of Coal Gas," by Mr. R. P. Spice, C.E., past-president. The author gave a *résumé* of the history of the various steps in the progress of coal-gas manufacture since the adoption of clay retorts. Referring to the objections raised to these on their first introduction, he showed how these objections had been disproved by experience. He then noticed the exhauster in its two forms,—by air-pump and steam-jets—and explained the advantages of both. The question of charging and drawing retorts by machinery instead of by hand was fully considered. Some of the difficulties that arose in practice were afterwards discussed, such as those caused by dips and anti-dips, choked ascension-pipes, and those occasioned by naphthaline, with the various remedies proposed. The paper then dealt with the advantages of purification in closed vessels, as now carried on by means of carbonising coal with a small percentage of slaked lime mixed with it before charging the retorts; the result being the entire abolition of the nuisance arising from the frequent opening and cleansing of purifiers on the old method, which is no longer necessary.

Trade Mems.—Messrs. W. H. Lindsay & Co., of the Paddington Ironworks, announce that they have been appointed by Messrs. Dorman, Long, & Co., of Middlesbrough, sole agents for the sale of their English steel and iron rolled joists, &c. We are informed that all Messrs. Dorman, Long, & Co.'s joists are branded with their name in full, and are guaranteed to stand a test of from 22 to 24 tons tensile strain. The prices, we are informed, are only very slightly in excess of those of Belgian joists. We are glad to see English ironmasters competing with those of Belgium in rolling joists of deep section.——The Coalbrookdale Company have just removed their London show-room from Holborn Viaduct to the Victoria Embankment, corner of New Bridge-street, Blackfriars, and opposite Queen Victoria-street.

Tettenhall.—A window in Tettenhall Church, Wolverhampton, has recently been filled with stained glass from the studio of Messrs. Warrington & Co., of Fitzroy-square. The window is of two-lights, and illustrates subjects of two of the Acts of Mercy, beneath architectural canopies.

British Archæological Association.—The closing meeting of the session was held on Wednesday, June 2nd, Mr. W. H. Cope in the chair. Mr. J. T. Irvine exhibited sketches of some early Norman sculptures in Castor Church, Northants, and pointed out their resemblance in style to others on the font of the neighbouring church of Wansford. Mr. R. Mann described a remarkable carved stone found at Bath, having figures on three of its sides. Mr. Loftus Brock, F.S.A., reported the existence of a Saxon font at Tring, Bucks, now lying overturned in the porch. It is covered with interlaced work. A paper was then read by Mr. Algernon Brent on some early seals, which were exhibited at the same time. One of these was of Richard de Redvers, Earl of Devon, who died 1184. A second paper was then read by Mr. G. R. Wright, F.S.A., on a Roman building at Reims. It is only partially executed, and was inspected by the members of the Leland Club during the recent visit to France. There are six or more columns in a row,—their bases and about one half of their shafts being perfect, *in situ*; the remains of a hypocaust, and a great many walls, indicating that the building has been one of magnitude. The position is close to the Great Roman Archway in a public garden. The excavations are suspended for the present, until the Town Council has given sanction for the further works of clearance. The Rev. Scott Surtees pointed out some points of resemblance of the construction to those of the Roman Camp on the Saalberg. The concluding paper was by Mr. E. Walford on the painted glass still existing at Vane House, Hampstead, formerly the residence of Bishop Butler. There is a similar series of roundels at Oriel College, Oxford, believed by Cardinal Newman to have been brought from Hampstead.

Steel Rails for Foundations.—Steel rails are now frequently used in the foundations of large buildings, and Chicago is, we believe, the city where they were first employed. The Montauk Block and the Central Building, now being erected on the old Rookery site, are among the structures partially supported by steel rails. Such a foundation is specially required in that city on account of the nature of the soil. In New York and elsewhere, where there is a solid rock bottom, there is usually no need of such a device, but even New York builders who have seen the use rails are put to are on the point of trying the experiment. The rails are laid close together imbedded in cement, which in time becomes almost as hard as the steel itself, and there is no danger of weakening the steel by rusting when it is so protected from air and moisture. Such a foundation enables the builder to make the stone piers above lighter, and thus save a good deal of room in the basement. And on the basis of recent prices, steel rails are cheaper than stone. This is an enlargement upon a system of wire concrete introduced into construction in this country some ten or twelve years since, in which a network of steel or iron wire was woven into the concrete.—*Iron*.

PRICES CURRENT OF MATERIALS.

TIMBER.	£.	s.	d.	£.	s.	d.
Greenheart, B.G. ....ton	6	5	0	7	0	0
Teak, E.I. ....load	11	10	0	15	0	0
Sequoia, U.S.....foot cube	0	2	4	0	2	9
Ash, Canada ....load	3	0	0	4	10	0
Birch ,, ...	2	10	0	4	0	0
Elm ,, ...	3	10	0	4	10	0
Fir, Dantsic, &c.	1	10	0	4	0	0
Oak ,, ...	2	10	0	5	0	0
Canada	4	0	0	6	10	0
Pine, Canada red	2	10	0	4	0	0
,, yellow	3	0	0	5	0	0
Lath, Dantsic ....fathom	3	10	0	5	0	0
St. Petersburg	4	0	0	6	0	0
Wainscot, Riga....log	2	15	0	4	10	0
,, Odessa, crown	3	7	6	0	0	0
Deals, Finland, 2nd and 1st...std.	7	0	0	8	0	0
,, 4th and 3rd	6	0	0	7	0	0
Riga	6	0	0	7	0	0
St. Petersburg, 1st yellow	8	0	0	14	0	0
,, 2nd ,, ...	7	0	0	8	0	0
,, white	7	0	0	10	0	0
Deals, Swedish	6	0	0	15	0	0
White Sea	7	0	0	17	10	0
Canada Pine, 1st	17	0	0	30	0	0
,, 2nd	12	0	0	17	0	0
,, 3rd, &c.	6	0	0	10	0	0
,, Spruce 1st	8	0	0	11	0	0
,, 3rd and 2nd	5	0	0	7	10	0
New Brunswick, &c....	5	0	0	7	0	0
Battens, all kinds	4	0	0	12	0	0
Flooring Boards, sq. 1 in., Prepared, first	0	9	0	0	13	0
Second	0	7	6	0	8	6
Other qualities	0	5	0	0	7	0
Cedar, Cuba.....foot	0	0	3½	0	0	4
Honduras, &c.	0	0	2½	0	0	4
Australian	0	0	2	0	0	3

TIMBER (*continued*).	£.	s.	d.	£.	s.	d.
Mahogany, Cuba	0	0	5	0	0	7½
St. Domingo, cargo average	0	0	5	0	0	7½
Mexican ,, ...	0	0	3½	0	0	4½
Tobasco ,, ...	0	0	4	0	0	6½
Honduras ,, ...	0	0	4½	0	0	6½
Maple, Bird's-eye	0	0	6	0	0	8
Rose, Rio ....ton	7	0	0	10	0	0
Bahia....	6	0	0	10	0	0
Box, Turkey	5	0	0	17	0	0
Satin, St. Domingo ....foot	0	0	7	0	0	11
Porto Rico	0	0	8	0	1	2
Walnut, Italian	0	0	4	0	0	6
METALS.						
IRON—Pig in Scotland ....ton	0	0	0	0	0	0
Bar, Welsh, in London....	4	10	0	4	17	6
,, in Wales	4	5	0	4	10	0
,, Staffordshire, London	5	5	0	6	10	0
Sheets, single, in London....	6	15	0	8	10	0
Hoops ,, ...	6	0	0	7	0	0
Nail-rods ,, ...	5	10	0	6	10	0
COPPER—						
British, cake and ingot ....ton	42	10	0	43	10	0
Best selected	44	0	0	44	10	0
Sheets, strong....	50	0	0	0	0	0
,, India	47	0	0	48	0	0
Australian	0	0	0	0	0	0
Chili, bars	39	10	0	40	0	0
YELLOW METAL....lb.	0	0	4½	0	0	4½
LEAD—Pig, Spanish	12	15	0	0	0	0
English, common brands....	13	2	6	0	0	0
Sheet, English	13	5	0	14	0	0
SPELTER—						
Silesian, special ....ton	14	0	0	14	5	0
Ordinary brands	13	15	0	14	0	0
TIN—						
Banca ....ton	0	0	0	0	0	0
Billiton	0	0	0	0	0	0
Straits	99	10	0	0	0	0
Australian	100	0	0	0	0	0
English ingots....	103	0	0	0	0	0
ZINC—						
English sheet ....ton	18	0	0	18	5	0
OILS.						
Linseed ....ton	21	0	0	21	5	0
Cocoanut, Cochin	31	10	0	0	0	0
Ceylon	25	10	0	0	0	0
Copra....	0	0	0	0	0	0
Palm, Lagos	23	10	0	0	0	0
Palm-nut Kernel	0	0	0	0	0	0
Rapeseed, English pale....	22	10	0	0	0	0
,, brown	21	0	0	21	5	0
Cottonseed, refined	18	0	0	19	0	0
Tallow and Oleine	25	0	0	45	0	0
Lubricating, U.S.	6	0	0	10	0	0
,, Refined	8	0	0	13	0	0
TURPENTINE—						
American, in casks....cwt.	1	4	6	1	4	9
TAR—Stockholm ....barrel	0	17	0	0	17	6
Archangel....	0	10	6	0	11	3

TENDERS.

BEDFORD.—For new house, St. John's Hospital Building Estate, Bedford, for Mr. W. Sparks. Messrs. Bottle & Olley, architects, Great Yarmouth:—
Warton & Walker,* Bedford £536 0 0
* Accepted.

BEXHILL (Sussex).—For the erection of two covered seats on the Marina, and twelve uncovered. Mr. Joseph B. Wall, architect:—
J. H. Webb, Bexhill (accepted)..... £120 0 0

BEXHILL (Sussex).—For bar fittings to the Devonshire Hotel, for the proprietor. Mr. Joseph B. Wall, architect:—
Cabinet Work.
J. Higgs £175 0 0
W. Thompson, Clerkenwell (accepted) 150 0 0
Pewterer's Work.
F. J. Ruse, Bermondsey (accepted) ... £40 0 0

BROUGHTON (Hants).—For the erection of dwelling-house, with shop, bakehouse, slaughter-house, stabling, van shed, &c., at Broughton, Hants, for Mr. Thomas Hinwood. Mr. Fred. Bath, architect, Salisbury:—
W. J. & C. S. Young, Salisbury £1,494 0 0
Gilbert Harris, Salisbury 1,460 0 0
E. H. Sturgess, Ludgershall, near Andover (accepted) 1,255 0 0

CAMBERWELL.—For repairs to house, Love-lane, Camberwell, for Mr. Haden. Mr. Joseph B. Wall, architect:—
F. Head £129 0 9
J. Butler, Fulham (accepted)..... 98 10 0

CARDIFF.—For new Wesleyan mission chapel, Canton, Cardiff. Messrs. W. G. Habershon & Fawckner, architects, Cardiff:—
D. J. Davies £2,430 0 0
D. Davies 2,300 0 0
J. E. Evans..... 1,994 0 0
T. Gough..... 1,977 0 0
H. Marshall 1,971 0 0
C. Shepherd & Son 1,833 0 0
J. Hallett 1,811 0 0
[All of Cardiff.]

CROUCH END (Middlesex).—For the erection of shop, residence, and stable, The Broadway, for Messrs. H. Williams & Co. Mr. John Farrer, architect and surveyor, Finsbury-pavement:—
Macfarlarne Bros. £1,640 0 0
Wilkinson Bros. 1,575 0 0
J. Smith & Sons 1,550 0 0
Dunmore 1,545 0 0
Houghton 1,535 0 0
Toms 1,527 0 0
Outhwaite & Son (accepted)..... 1,443 0 0

CROYDON.—For rebuilding the Rail View Hotel, Selsdon-road. Mr. F. West, architect, Coombe-road, Croydon:—
Marriage, Croydon £2,110 0 0
Taylor, Croydon 1,900 0 0
Maides & Harper, Croydon 1,684 0 0
Page, Croydon 1,675 0 0
Smith & Sons, South Norwood..... 1,596 0 0

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Infectious Diseases Hospital	Liverpool Corporation...	50*l.* and 25*l.*	August 10th	i.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Sefton-street Improvement	Liverpool Corporation	*Official*	June 16th	ii.
Painting and Repairing Workhouse	Poplar Union	J. S. & F. Clarkson	June 17th	xviii.
Works, Repairs, and Building Materials	War Department	*Official*	June 18th	ii.
Painting Hounslow Barracks, &c.	do.	do.	June 19th	ii.
Making-up Streets	do.	do.	June 22nd	ii.
Road Making and Paving	Willesden Local Board	O. Claude Robson	do.	ii.
New Stables	Wimbledon Local Brd.	*Official*	do.	xviii.
Erection of Mortuary Buildings	Vestry of St. Luke, Middlesex	do.	do.	ii.
Paving Works	Greenwich Bd. of Wks.	do.	June 23rd	ii.
Paving Margins of Tramways	do.	do.	do.	ii.
Stores	do.	do.	do.	ii.
Granite Carriageway Paving	Hackney Board of Wks	J. Lovegrove	do.	ii.
Pipe-Sewers, &c.	Lambeth Vestry	H. McIntosh	June 24th	xviii.
Erection of Houses, Angle	Admiralty	*Official*	June 25th	i.
Painting, Papering, and Repairing Works	Met. Asylums Board	do.	June 26th	xviii.
New Police-Station, Thornton Heath	Metro. Police Dist.	do.	do.	ii.
Cornish Boiler	Waxham Drainage Com.	do.	do.	ii.
Building and Attaching Chapel to House		W. Lee	do.	ii.
Guernsey Granite, Kentish Rag, Flints, &c.	Folkestone Cor.	A. W. Conquest	do.	ii.
Making-up Roads, Sewers, &c.	Lowestoft Town Council	R. H. Inch	June 28th	ii.
New Schools	Basingstoke Sch. Brd.	C. Bell	July 5th	xviii.
Engines, Boilers, and Pumping Machinery	Acton Local Board	C. N. Lailey	July 6th	ii.
Completion of Houses, West Hampstead		H. Cheston	Not stated	ii.
Completion of Tower, Christ Church, Epsom			do.	i.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Surveyor	Southend Local Board	200*l.*	June 22nd	xvi.

CUBITT TOWN.—For the erection of house and workshop, in Bilson-street, Cubitt Town, E., for Mr. G. Payne. Mr. J. W. Stocker, architect, St. Mary Axe :—
W. Buckland, Cubitt Town (accepted) £380 0 0

CUBITT TOWN.—For the erection of two houses in Seyssell-street, Cubitt Town, E., for Mr. W. H. Day. Mr. J. W. Stocker, architect :—
W. Buckland, Cubitt Town (accepted) £373 0 0

GREAT HARWOOD (Lancashire).—For wrought-iron palisading and entrance-gates. Quantities supplied by Mr. A. W. R. Simpson, architect, Richmond-chambers, Blackburn :—

	A* £ s. d.	B† £ s. d.
J. W. Singer & Sons, Frome	837 10 0	737 0 0
Edgar Keeling, Teale, & Co. London	694 2 6	663 15 6
Jones & Willis, London	625 0 0	—
St. Pancras Ironworks Co., London	611 0 0	462 0 0
Raby, Fell, & Co., Manchester	515 0 0	—
James Stead, Blackburn	495 0 0	385 0 0
Wm. Cumpstey, Blackburn	490 0 0	358 0 0
Marshall & Williams, Birmingham	462 7 0	412 7 0
Musgrave & Co. Belfast	425 0 0	340 0 0
Bayliss, Jones, & Bayliss, Wolverhampton	416 3 4	380 13 4
C. Smith & Sons, Birmingham	411 10 6	351 10 6
Robert Kay, Helmshore, Manchester	382 13 0	346 0 0
Hill & Smith, Brierley Hill, Stafford	375 0 0	355 0 0
Hugh Hubberstey, Great Harwood	355 15 6	228 13 8
Arthur Simpson, Blackburn	349 5 8	306 5 8
Worrell & Co. Liverpool	347 19 0	330 0 0
E. C. & J. Keay, Birmingham	342 10 0	—
Brownlee & Murray, Glasgow	333 18 6	—
Richard Oddie, Bury	322 17 0	202 17 0
William Walton, Burnley	314 16 6	259 16 6
F. Morton & Co., Liverpool	312 0 0	—
Thomas Wurdleworth, Padiham, near Burnley	293 10 0	—
Thomas Ashworth, Burnley (accepted)	240 0 0	197 16 0

* With wrought-iron heads to palisading.
† With cast-iron heads to palisading.

HAMMERSMITH.—For making up roads at Hammersmith, for the Vestry :—

	Sinclair-road.	Bulmer-road.
Hindle & Morrish	£380	£700
Trehearne	169	594
Nowell & Robson	145	672
Tomes & Wimpey	122	615
Cost (accepted)	93	556

HAMPSTEAD.—For the making of sewers, manholes, ventilating-shafts, &c., and for the making of roads and paths, &c., on the National Standard Land Company's Woodbine Estate, Hampstead :—

Rowland Bros.	£1,925 0 0
Ambrose Oliver	1,900 0 0
George Osenton	1,787 0 0
Chas. Killingback	1,750 0 0
George Felton	1,444 0 0
Ford & Co.	1,370 0 0
William Kew	1,280 16 0

HAMPSTEAD.—For the erection of the Bickersteth Memorial Hall, Hampstead. Mr. Wilfred J. Hardcastle, architect, Lancaster House, Strand. Quantities by Messrs. Young & Brown :—

E. Lawrance & Sons	£1,495 0 0
Neave & Neave	1,393 0 0
Charles Wall	1,377 0 0
Kirk & Randall	1,360 0 0
A. & E. Braid	1,357 0 0
Foster & Dicksee	1,354 0 0
C. F. Kearley	1,347 0 0
Staines & Son	1,344 0 0
B. E. Nightingale	1,343 0 0
Higgs & Hill	1,324 0 0
E. C. Howell & Son (accepted)	1,230 0 0

HOLLOWAY.—For the erection of hall, 18, Albion-road, Holloway. Mr. T. S. Archer, architect, Basinghall-street :—

Adams	£1,040 0 0
Patman & Fotheringham	989 0 0
Ebbage	786 0 0
Holliday & Greenwood (accepted)	713 0 0

KILBURN.—For alterations to the Albert Edward, Albert-street, Kilburn, for Mrs. Wright. Mr. H. I. Newton, architect, Queen Anne's-gate :—

Excell & Lister	£625 0 0
Campbell (accepted)	457 0 0
For Pewterers' Work.	
Paddon (accepted)	46 0 0

LONDON.—For alterations and additions to 77, St. John-street, and 29, St. John's-lane, Clerkenwell, for Messrs. Fenner, Appleton, & Co. Mr. Herbert D. Appleton, F.R.I.B.A., architect, Wool Exchange. Quantities by Mr. F. T. W. Miller, Guildhall-chambers :—

Clarke & Bracey	£2,139 0 0
T. H. & R. Roberts	2,087 0 0
Patman & Fotheringham	1,871 0 0
Shurmur	1,845 0 0
Colls & Sons	1,788 0 0

LONDON.—For the erection of Portman Chapel Crèche and mission-house. Mr. Alfred R. Pite, architect, Bloomsbury-square. Quantities by Mr. Rookwood :—

Hayward & Son	£3,400 0 0
Harris	3,182 0 0
Woodward	2,994 0 0
Lathey Bros.	2,867 0 0
Toms	2,858 0 0
Falkner	2,798 0 0
Patman & Fotheringham	2,773 0 0
Simpson	2,750 0 0
Hooper	2,743 0 0
Smith & Sons	2,719 0 0
Grover	2,673 0 0
Macey	2,621 0 0
Wall Bros. (accepted)	2,578 0 0

LONDON.—For pulling down and rebuilding 24 and 25, Castle-street East, W., for Mr. Smith. Mr. W. J. Miller, architect. Quantities supplied :—

C. Manning	£2,557 0 0
Spencer & Co.	2,520 0 0
E. Fairchild	2,489 0 0

LONDON.—For alterations to the Gloucester Arms, Mason-street, Old Kent-road. Mr. R. A. Lewcock, architect, Bishopsgate-street Within :—

Simpson	£265 0 0
Roye	198 0 0
Spencer & Co.	195 0 0

LONDON.—For the extension of Leadenhall Market, for the Honourable the Corporation of the City of London. Mr. Horace Jones, architect. Quantities by Messrs. William Reddall & Son :—

Webster	£23,540 0 0
Holliday & Greenwood	22,947 0 0
Colls & Sons	22,694 0 0
Nixon	22,140 0 0
Boyce	22,110 0 0
Conder	22,000 0 0
Hart	21,980 0 0
Holland & Hannen	21,976 0 0
Hall, Beddall, & Co.	21,938 0 0
Chappell	21,900 0 0
Bywaters	21,793 0 0
Killby & Gayford	21,570 0 0
Perry & Co.	21,494 0 0
Morter	21,432 0 0
Gentry	20,875 0 0
Mowlem & Co.	20,487 0 0

LONDON.—For the erection of billiard-room addition at the Brockley Constitutional Club, for the Committee. Mr. Joseph B. Wall, architect, Walbrook :—

Thos. Sayers	£270 0 0
S. Schofield	265 0 0
T. D. Leng	260 0 0
Jerrard	224 0 0
G. H. Webb	224 0 0
Best	220 0 0
H. L. Holloway	199 0 0
Congdon Bros.	189 12 0

LONDON. — For rebuilding 2, Gloucester-street, Theobald's-road, W.C., for Mr. Haslett. Messrs. John & S. Flint Clarkson, architects. No quantities :—

Bridgman	£1,497 0 0
McCormack & Sons	1,469 0 0
Manning	1,329 0 0
Pusey & Lumley	1,246 0 0
Sabey & Son	1,159 0 0

LUDDENDEN (Yorks).—For new shed and warehouse, Luddenden. Mr. T. L. Patchett, architect, Halifax :—

Total amount of highest Tenders	£1,532 14 6
Ditto lowest Tenders	1,331 19 9
Total amount of accepted Tenders, which include old materials re-used	1,424 10 0

[Architect's estimate, 1,500*l.*]

Accepted Contractors.

Excavator's, Mason's, and Bricklayer's Work.—Mr. Rowland Gaukroger, Warley.
Carpenter's and Joiner's Work.—Mr. James Lister, Hebden Bridge.
Plumber's and Glazier's Work.—Mr. Levi Crabtree, Luddenden.
Slater's and Plasterer's Work.—Messrs. J. & T. Alderson, Luddenden.
Ironfounders' Work.—Messrs. Wood Bros., Sowerby Bridge.
Concrete Flooring.—Messrs. George Greenwood & Sons, Halifax.

LUTON (Beds.).—For the erection of dyeing premises at Luton, for Mr. T. Lye. Mr. J. R. Brown, architect, Luton :—

T. & E. Neville	£1,698 0 0
Slough Bros.	1,570 0 0
G. Smart	1,475 0 0
W. Dunham (accepted)	1,462 0 0

[All of Luton.]

PENN (Bucks).—For the erection of St. Margaret's Parish Room, &c., Tyler's-green, Penn, Bucks. Mr. Arthur Vernon, architect, High Wycombe :—

Z. Wheeler	£400 0 0

SHINBRIDGE (Gloucestershire).—For new house and farm buildings at Shinbridge, Gloucestershire, for the Right Hon. Lord Fitzhardinge. Mr. J. H. Littlejohn, architect, Berkeley. Quantities by Mr. B. W. Pope, Bristol :—

Church, Bristol	£3,570 0 0
Stephens & Bastow, Bristol	3,335 0 0
S. Cox, Stroud	3,295 0 0
Nicholls & Co., Shinbridge	3,251 0 0
Wm. Jones, Gloucester	3,226 0 0
Meredith, Gloucester	3,150 0 0
Roach & Son, Charfield	3,100 0 0
F. & J. Williams, Bristol	2,984 0 0
Workman & Son, Shinbridge	2,980 0 0
H. A. Forse, Bristol	2,980 0 0
Harper, Stroud	2,924 0 0
D. C. Jones & Co., Gloucester	2,920 0 0
Baxter, Stroud	2,917 0 0
G. Drew, Chalford	2,916 4 0
Coleman, Chaxhill	2,897 0 0
Wilkins & Son, Bristol	2,880 0 0
Gregory & Son, Berkeley	2,869 10 6
A. King, Gloucester (accepted)	2,798 0 0

SPALDING (Lincolnshire).—For Wesleyan Methodist Chapel, Spalding. Mr. F. Boreham, architect :—

Thompson & Son, Louth	£2,992 0 0
S. & W. Pattinson, Sleaford	2,890 0 0
Broadhurst, March	2,800 0 0
J. Holloway, London	2,790 0 0
G. Mower, London	2,667 0 0
J. Collingwood & Son, March	2,663 0 0
Bennett Bros., Downham	2,579 0 0
Scholes, Rouse, & Clarke, Stamford	2,450 0 0
J. Holmes, Wainfleet (accepted)	2,286 0 0

STOKESBY (Norfolk).—For works at Hilbro' House, Stokesby, Norfolk, for Mr. F. W. Waters. Messrs. Bottle & Olley, architects, Great Yarmouth :—

Second Contract.—Billiard Room and outer Entrance Hall.

E. Howes (bricklayer), Great Yarmouth	£462 0 0
R. Riches (carpenter), Postwick	268 0 0
Wolverton & Son (plumbers), Great Yarmouth	45 8 0

[All accepted.]

STOKE NEWINGTON.—For taking down and rebuilding the premises, 169, High-street, Stoke Newington. Mr. R. A. Lewcock, architect, Bishopsgate-street Within:—

Coldwell	£1,398 0 0
Kilby & Gayfo d	1,290 0 0
Pringle	1,251 0 0
Goodall	1,199 0 0
Anley	1,189 0 0
Ivory	978 0 0

STOKE NEWINGTON.—For taking down and re-erecting the temporary iron and wood building at corner of Rectory and Evering roads, Stoke Newington, and for providing and laying in sundry foundations for permanent lecture-hall on the site, for the Building Committee of the Rectory-road Congregational Church. Mr. R. A. Lewcock, architect:—

	Laying in Foundations.	Removing Iron Building.	Removal of Organ.
Croggon	£285 0	£187 10	—
Jackson & Todd	245 0	—	£19 10
Lascelles	184 0	107 0	12 0
Goodall	180 0	104 0	10 0
Roome	136 0	60 0	—

STRATFORD (Essex).—For pulling down and rebuilding the George public-house, The Broadway, Stratford, for the London and Burton Brewery. Mr. T. S. Archer, architect, Basinghall-street:—

Forrest	£3,687 0 0
Boyce	3,405 0 0
Hall, Beddall, & Co.	3,303 0 0
Perry & Co.	3,372 0 0
Holland	3,296 0 0
Morter	3,213 0 0
Holliday & Greenwood	3,139 0 0
Ashby & Horner	3,093 0 0
Barnes (accepted)	2,788 0 0
Fittings.	
Holland	£304 0 0
Lascelles	289 0 0
Boyce	285 0 0
Hall, Beddall, & Co.	268 0 0
Ashby & Horner	260 0 0
Perry & Co.	257 0 0
Morter	251 0 0
Forrest	237 0 0
Holliday & Greenwood	215 0 0
Barnes	192 15 0

STREATHAM.—For alterations and additions to 3, Streatham-row, for Messrs. Leverett & Frye. Mr. J. O. Smith, architect, Southampton-street, Strand:—

W. Mason	£407 0 0
Hill Bros.	359 0 0
W. Morton	345 0 0

TOTTENHAM.—For pulling down and rebuilding two houses, with shop and stable, at Eagle-place, High Cross-lane, Tottenham, for Mr. Dixon. Mr. Chas. J. Higgins, architect:—

Thompson	£675 0 0
Holloway	660 0 0
Williams	648 0 0
Wilkins Bros.	637 0 0
Lamble	623 0 0
Dearing & Son	605 0 0

TOXTETH PARK.—For the completion of Wendell-street, for the Toxteth Park Local Board. Contract No. 8. Quantities supplied by the engineer, Mr. John Price, Assoc. M. Inst. C.E.:—

Hayes & Son, Bolton	£249 9 9
Chas. Burt, Toxteth Park	220 0 0
McCabe & Co., Kirkdale	210 6 9
L. Marr, Toxteth Park	189 11 6
Anwell & Co., Liverpool	179 9 5
W. F. Chadwick, Liverpool	175 15 0
R. Lomax, Eccles	170 7 9
Walkden & Co., Bootle (accepted)	169 18 6

[Engineer's estimate, 190*l.*]

TOXTETH PARK.—For the completion of Holme-street (Contract No. 7), for the Local Board. Quantities supplied by the engineer, Mr. John Price, Assoc. M. Inst. C.E.:—

McCabe & Co., Liverpool	£296 14 0
Hayes & Son, Bolton	292 9 4
Chas. Burt, Toxteth Park	281 0 0
Anwell & Co., Liverpool	279 3 8
L. Marr, Toxteth Park	241 14 7
R. Lomax, Eccles	237 1 11
W. F. Chadwick, Liverpool (accepted)	235 18 1
Walkden & Co.,* Bootle	197 0 0

[Engineer's estimate, 269*l.*]

* Withdrawn owing to error.

TOXTETH PARK.—For the completion of Whittier-street, for the Toxteth Park Local Board. Contract No. 9. Quantities supplied by the engineer, Mr. John Price, Assoc. M. Inst. C.E.:—

Hayes & Son, Bolton	£253 1 4
McCabe & Co., Kirkdale	227 3 6
Chas. Burt, Toxteth Park	220 0 0
L. Marr, Toxteth Park	192 19 0
S. McCullagh, Toxteth Park	189 13 5
Anwell & Co., Liverpool	184 12 1
W. F. Chadwick, Liverpool	180 3 2
R. Lomax, Eccles	178 11 6
Walkden & Co., Bootle (accepted)	173 8 0

[Engineer's estimate, 195*l.*]

WITNEY (Oxon).—For new residence for Mr. J. Vanner Early. Messrs. Dunk & Geden, architects, Leadenhall-street, E.C.:—

Bartlett Bros., Witney	£2,670 16 0
Wilkins & Son, Eynsham	2,567 0 0
W. Cantwell, Witney	2,493 0 0

YARMOUTH.—For new class-room and lobby, for eighty children, to St. George's Board Schools, Great Yarmouth. Messrs. Bottle & Olley, architects, Great Yarmouth:—

H. Springall	£464 0 0
R. Davy	459 0 0
J. S. Cooper	447 10 0
E. Howes	441 0 0
J. Bray	436 0 0
J. Leggett	429 0 0
Cork & Beech (accepted)	423 10 0

[All of Great Yarmouth.]

YARMOUTH.—For additions to business offices, for Sir E. K. Lacon & Sons, North Howard-street, Great Yarmouth. Messrs. Bottle & Olley, architects, Great Yarmouth:—

Wm. Wright	£812 16 6
Cork & Beech	784 10 0
E. Howes	755 0 0
J. Leggett (accepted)	752 0 0

[All of Great Yarmouth.]

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Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds, and milk-rooms, granaries, tun-rooms, and terraces. [ADVT.

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